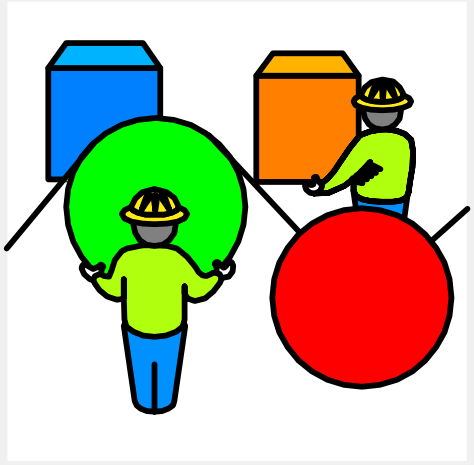
Allen-Bradley

DeviceNetManager Software

Version 3.001
(Cat. No. 1787-MGR)

User Manual



Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes, and standards.

The illustrations, charts, sample programs, and layout examples shown in this guide are intended solely for example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI–1.1, “Safety Guidelines For The Application, Installation and Maintenance of Solid State Control” (available from your local Allen-Bradley office) describes some important differences between solid-state equipment and electromechanical devices which should be taken into consideration when applying products such as those described in this publication.

Reproduction of the contents of this copyrighted publication, in whole or in part, without written permission of Allen-Bradley Company, Inc., is prohibited.

Throughout this manual we make notes to alert you to possible injury to people or damage to equipment under specific circumstances.

ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

Attentions help you:

- identify a hazard
- avoid the hazard
- recognize the consequences

Important: Identifies information that is especially important for successful application and understanding of the product.

Important: We recommend that you frequently back up your application programs on an appropriate storage medium to avoid possible data loss.

DeviceNet is a trademark of Open DeviceNet Vendor Association (O.D.V.A.).
PLC, WinDNet16, DeviceNetManager, FLEX I/O, RediSTATION, AdaptaScan, ArmorBlock, and SLC are trademarks of Allen-Bradley Company, Inc.
Microsoft is a registered trademark of Microsoft Corporation.
Windows is a trademark of Microsoft Corporation.

Summary of Changes

New and Revised Information

The following features are new additions to the software:

- graphical network and device descriptions
- right mouse button menus
- printing a project's network topology
- new communication sub-system using the WinDNet16™ protocol engine

These chapters contain new information.

For information on	See page
Master and Slave Centric perspectives	P-5
Right mouse button features	P-6
Options menu	P-7
Device connections (PCMCIA interface)	3–2
Saving a project	4-7
Cutting and Pasting network files	4-10
Copying network files	4-12
Printing a project's network topology	4-17
Adding devices to a network	5-1
Using the 1770-KFD with modem support	5-11
Monitoring all parameters	6-1
Using online compare	8-5
Downloading EDS files from the Internet	11-4
Creating EDS stub files online	11-7
Editing EDS stub files	11-10
Creating EDS stub files offline	11–11
Updating EDS bitmaps	11-17
Using keyboard shortcut keys	Appendix B

Revision Bars

We use revision bars to call your attention to new or revised information. A revision bar appears as a thick black line on the outside edge of the page as indicated here.

New chapters are only marked with a revision bar next to the title of the chapter.

Tips

We use tips to show you shortcuts while that help execute DeviceNetManager Software functions. An example tip is shown below.

▶ You can also choose **Online Compare** from the *Topology* menu by clicking the right mouse button

Index

Important User Information 1

Summary of Changes . . . . . soc–i

New and Revised Information . . . . . soc–i
Revision Bars . . . . . soc–i
Tips . . . . . soc–i

About This Manual P–1

What's in This Manual P–1
Contents of Your Order P–1
Audience P–2
Conventions P–2
Using Online Help P–2
Standard Windows Tools P–2
Terminology P–3
Related Publications P–3
Screens P–4
Menu and Tool Bars P–4
Status and Info Bars P–4
Master and Slave Centric Perspective P–5
Right Mouse Button Menus P–6
Dialog Boxes P–7
Enabling and Disabling Confirmation for User Choices P–7
Support Services P–8
Technical Support P–8
Engineering and Field Services P–8
Technical Training P–8
Repair and Exchange Services P–8

Software Overview 1–1

What's in This Chapter 1–1
Control Systems Divided into Projects 1–1
Creating Projects 1–2
Device Preparation 1–2
– input filter time on an input module 1–2
Device Configuration 1–3
Online or Offline Device Configuration 1–3
Standard Configuration 1–3
Custom Configuration 1–4
Configuration Methods 1–4
About the File Extensions 1–4

Getting Started 2–1
What's in This Chapter 2–1
What You Need 2–1
Installing the Software 2–1
Exiting the Installation 2–5

Setting Up Your Online Connection 3–1
What's in This Chapter 3–1
About the DeviceNet Communication 3–1
Device Connections 3–2
Connecting the RS-232 Interface Module 3–4
Power From Network 3–4
Power From 9V DC Power-Supply Adapter 3–5

Working with Projects and Networks 4–1
What's in This Chapter 4–1
How Projects Benefit You 4–1
Using the Project Menu 4–1
Creating a New Project 4–2
Adding Networks to a Project 4–4
Opening an Existing Project 4–6
Saving a Project 4–7
Editing Network Information 4–8
Cutting and Pasting Network Files 4–10
Copying Network Files 4–12
Editing Project Information 4–14
Exporting a Network to a File 4–15
Printing a Project to a File 4–16
Printing a Project's Network Topology 4–17

Adding Devices to a Project/Network 5–1
What's in This Chapter 5–1
Adding Devices to a Network 5–1
Adding a Device Not Listed in the Product Field 5–2
Editing Device Information 5–3
Moving Devices 5–4
Copying Devices to a Different Project/Network 5–5
Copying Devices in the Same Project/Network 5–7
Deleting Devices 5–8
Going Online 5–9
Going Online Using 1770-KFD Modem Support 5–10
Online Operation 5–11
Building a Network Online 5–11

Monitoring Parameters and Using the Internal Value . 6–1

What's in This Chapter 6–1
Monitoring Parameters 6–1
Monitoring All Parameters 6–1
Monitoring Individual Parameters 6–2
Using the Internal Value 6–3

Commissioning Nodes 7–1

What's in This Chapter 7–1
Commissioning Nodes 7–1
How to Commission Nodes 7–1

Using Network Who, Mini Who and Online Compare . 8–1

What's in This Chapter 8–1
Using Network Who 8–1
Using Mini Who 8–3
Using Online Compare 8–4

Configuring Devices Online 9–1

What's in This Chapter 9–1
Understanding Configuration Methods 9–1
Configuring Devices Online in Basic Mode 9–2
Configuring Devices Online in Enhanced Mode 9–3
Loading from a Device 9–6
Saving to a Device 9–7
Performing Custom Configurations Online 9–7

Configuring Devices Offline 10–1

What's in This Chapter 10–1
Understanding Configuration Methods 10–1
Configuring Devices Offline in Enhanced Mode 10–2
Performing Custom Configurations Offline 10–4

Adding EDS Files 11–1

What's in This Chapter 11–1
Creating EDS Stub Files Online 11–7
Creating EDS Stub Files Offline 11–11
Creating an EDS File from Network Who 11–18

Launching External Configuration Tools 12–1

What's in This Chapter 12–1
Launching Custom Configuration Tools 12–1
Starting an External Configuration Tool 12–1

Using the Flash NVS Update Software A–1

What's in This Appendix A–1
About the Flash NVS Update Software A–1
Running the Flash NVS Update Software A–2
Troubleshooting A–7

Using the DeviceNetManager Software Shortcut Keys B–1

What's in This Appendix B–1
DeviceNetManager Software Function Shortcut Keys B–1
DeviceNetManager Software Topology Shortcut Keys B–1

About This Manual

What's in This Manual

Use this manual as a guide when you configure devices and manage projects on a DeviceNet™ network with DeviceNetManager™ software. A DeviceNet network is a CAN-based (Controller Area Network-based) network.

Chapter 1
Read this chapter to familiarize yourself with the software.

Chapter 2
Read this chapter to install the software.

Chapter 3
Read this chapter to set up your online connection.

Chapter 4
Read this chapter to begin working with projects and networks.

Chapter 5
Read this chapter to add devices to a DeviceNet project or network.

Chapter 6
Read this chapter to monitor your parameters.

Chapter 7
Read this chapter to commission nodes you add to the DeviceNet network.

Chapter 8
Read this chapter to useNetwork Who, Mini Who, and Online Compare

Chapter 9
Read this chapter to configure devices online.

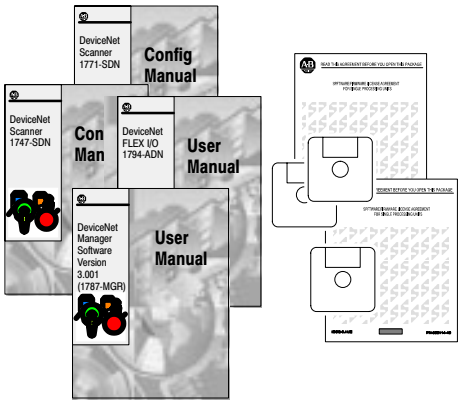
Chapter 10
Read this chapter to configure devices offline.

Chapter 11
Read this chapter to add electronic data sheet (EDS) files.

Chapter 12
Read this chapter to launch an external configuration tool.

Contents of Your Order

You should receive the following items with this package.



- three 3.5" DeviceNetManager software disks, catalog number 1787-MGR
- one DeviceNetManager Software User Manual, publication 1787-6.5.3
- one 1771-SDN Scanner Configuration Manual, publication 1771-6.5.118
- one DeviceNetManager Software Read This First document, publication 1787-6.5.3-RN1
- one 1747-SDN Scanner Configuration Manual, publication 1747-6.5.2
- one 1794-ADN DeviceNet Adapter User Manual, publication 1794-6.5.5
- one software license agreement
- one 3.5" NVS update software disk

Contact your Allen-Bradley sales representative if you are missing any of these pieces.

Audience

This documentation is geared for control engineers, application engineers, or system integrators who need to map current applications to run on the DeviceNet network.

Be sure that you are familiar with PLC-5® processors or SLC™ processors and these software programs before configuring devices or managing projects on the DeviceNet network:

- Microsoft® Windows™ operating system
- 6200, APS, or WINtelligent™ programming software

Conventions

The following conventions are used throughout the manual.

Type of text	Example
Menu names	*Utilities*
Text references to buttons	**OK**
Text that you enter	`setup`

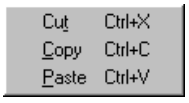
Using Online Help

The software contains context-sensitive online help plus standard Windows help. Access online help by pressing the **Help** button or the **F1** function button.

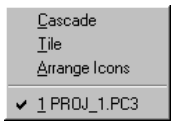
Standard Windows Tools

The software uses many standard Windows tools including:

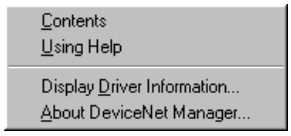
- editing tools



- window tools



- help tools



Terminology

Term	Definition
Device	Any DeviceNet-compatible device
EDS file	An electronic data sheet is a vendor-supplied file that specifies readable device identification information and parameter information such as allowable values
Network	A DeviceNet network or the software representation of a network
Network path	Directory and file location where network information is stored
Offline	Not able to communicate on the network
Online	A communication adapter is configured and enabled to communicate on the network
Parameter	Data that determines the operation of a device
Project	Method of organizing your work (i.e., networks, devices, and files)
Project path	Directory and file location where project information is stored
Point-to-point	A direct connection between the RS-232 interface module and a device

Related Publications

Title	Publication Number
1747-SDN Scanner Module Installation Instructions	1747-5.8
DeviceNet Scanner Configuration Manual (1747-SDN)	1747-6.5.2
DeviceNet RS-232 Interface Module Installation Instructions	1770-5.6
1771-SDN Scanner Module Installation Instructions	1771-5.14
DeviceNet Scanner Configuration Manual (1771-SDN)	1771-6.5.118
DeviceNet PC Card Installation Instructions (1784-PCD)	1784-5.29
1794-ADN DeviceNet Adapter Installation Instructions	1794-5.14
DeviceNet Adapter User Manual (1794-ADN)	1794-6.5.5

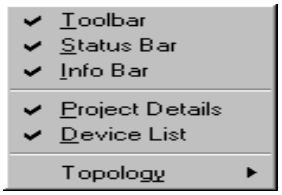
Screens

This manual uses screen captures to represent the actual software. This section describes the various screen captures you'll see.

Menu and Tool Bars

Through the *View* menu, you can toggle the tool bar, status bar, info bar, project details, or the device list menu items, choosing to show or hide the bar. A checkmark indicates that it's visible.

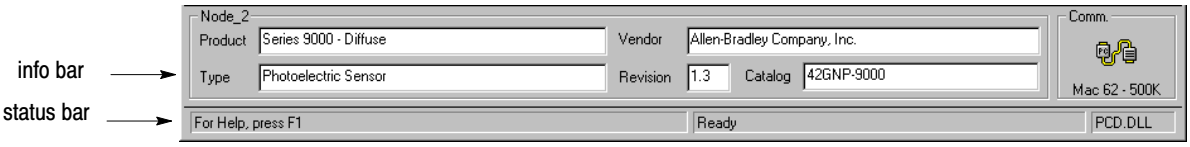
View



A bubble description of what each button on the tool bar does is displayed when your cursor points to the button.

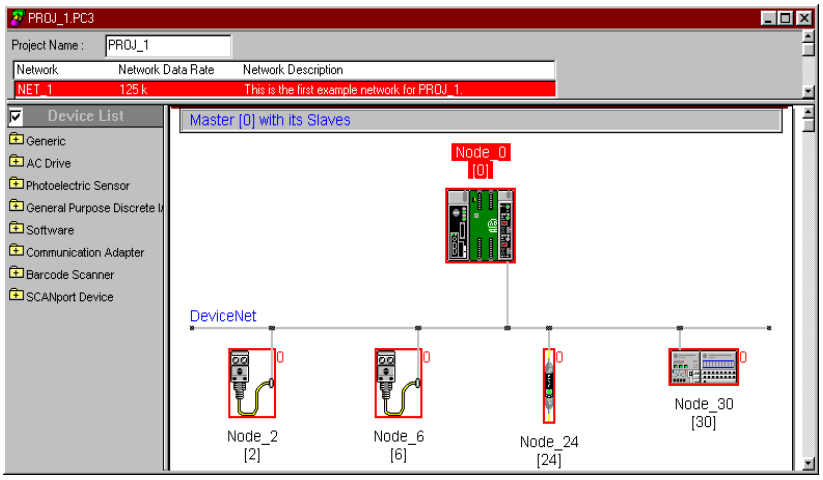
Status and Info Bars

The status and info bars appear at the bottom of your screen and provides the current status of an application and details about the device currently selected.

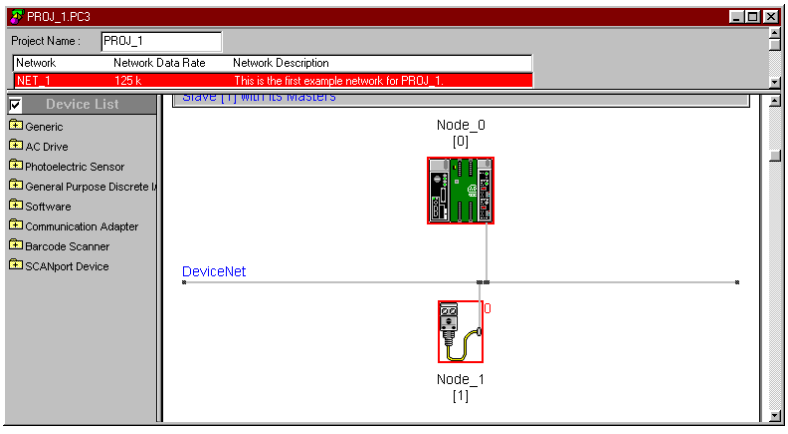


Master and Slave Centric Perspective

You can view your network topology by showing master/slave and slave/master relations. From the *View* menu under **Topology**, choose **Master Centric** and the topology will display your devices by each master and its slave.



From the View menu under **Topology**, choose **Slave Centric** and the topology will display your devices by slave in relation to its master.



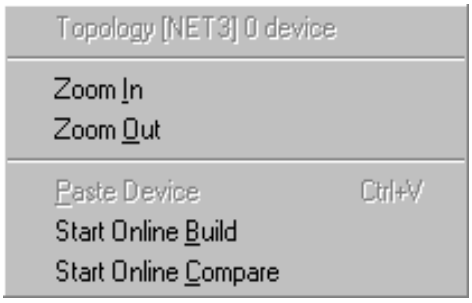
You can press the ESC key to return the perspective to the network view, organized in node order.

Right Mouse Button Menus

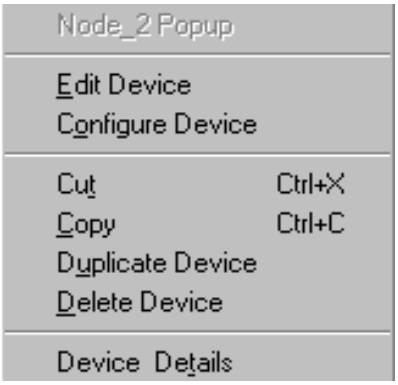
You can access project-action menus by clicking your right mouse button.

Menu result	Cursor position	Menu description
Project Details Menu	In the Project Details Section	Edit, add, and delete networks in projects; edit projects
Device Details Menu	In the network with a device selected	Review device details; configure, copy, edit, duplicate, and delete devices from networks
Topology Menu	In the network without a device selected	Zoom in and out, paste devices, and start online builds and online compare

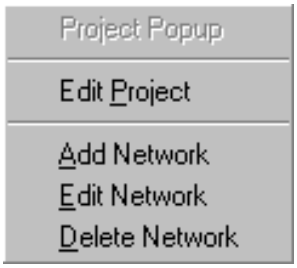
Topology Menu



Device Details Menu

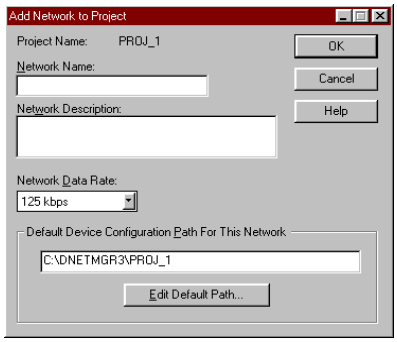


Project Details Menu



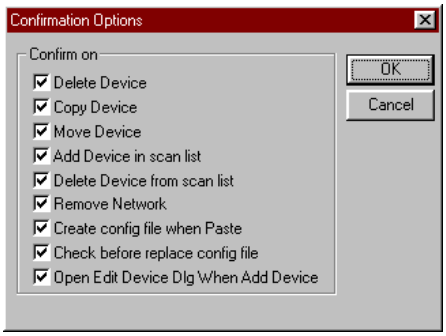
Dialog Boxes

Dialog boxes contain buttons you choose to cause a particular action to occur.



Enabling and Disabling Confirmation for User Choices

DeviceNetManager often displays confirmation boxes that allow you to confirm the choices you make while operating the application. From the *Utilities* menu, choose **Options** and you can disable any or all confirmation boxes in DeviceNetManager software.



Support Services

At Allen-Bradley, customer service means experienced representatives at Customer Support Centers in key cities throughout the world for sales, service, and support. Our value-added services include:

Technical Support

- SupportPlus programs
- telephone support and 24-hour emergency hotline
- software and documentation updates
- technical subscription services

Engineering and Field Services

- application engineering assistance
- integration and start-up assistance
- field service
- maintenance support

Technical Training

- lecture and lab courses
- self-paced computer and video-based training
- job aids and workstations
- training needs analysis

Repair and Exchange Services

- your only “authorized” source
- current revisions and enhancements
- worldwide exchange inventory
- local support

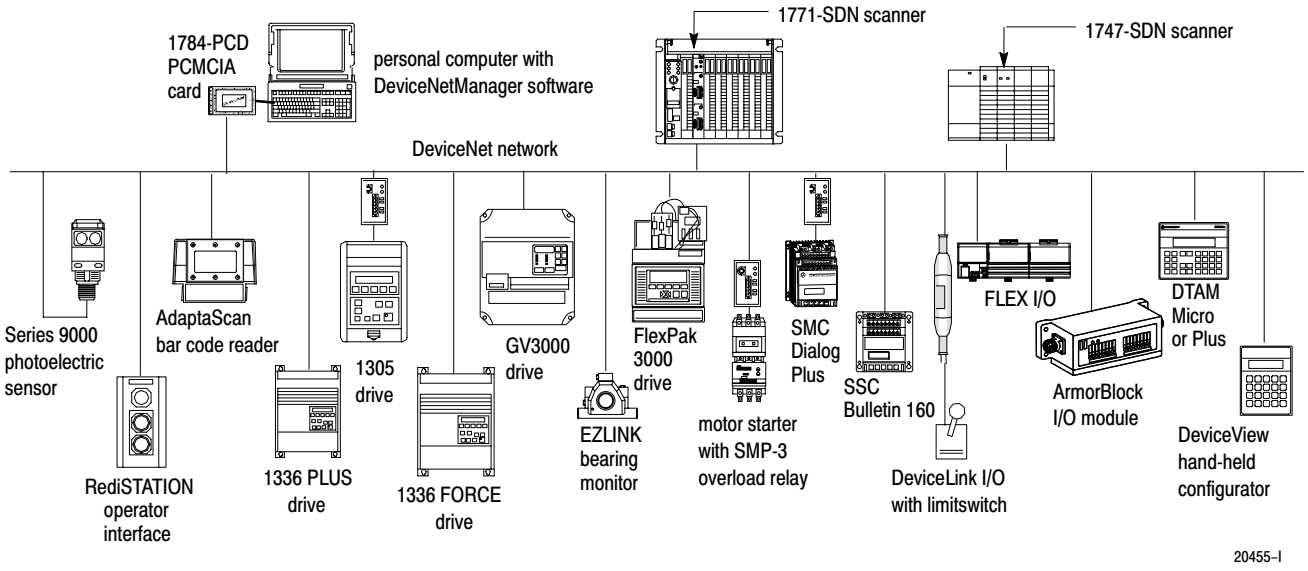
Software Overview

What's in This Chapter

Read this chapter to familiarize yourself with the software.

For information on	See page
Control systems divided into projects	1–1
Device preparation	1–2
Standard configuration	1–3
Custom configuration	1–4
Configuration methods	1–4
About the file extensions	1–4

The software resides on a host computer – an integral part of the DeviceNet network. It is designed to be compatible with the DeviceNet Specification, Volume I and Volume II.



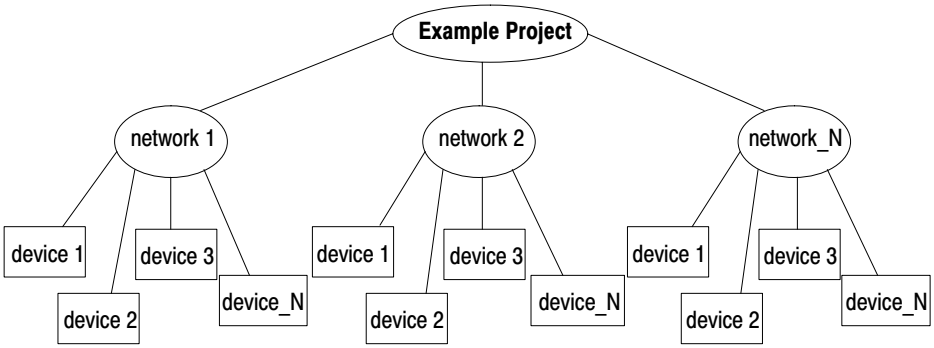
Control Systems Divided into Projects

The software provides a project structure as a method of organizing your work, allowing you to:

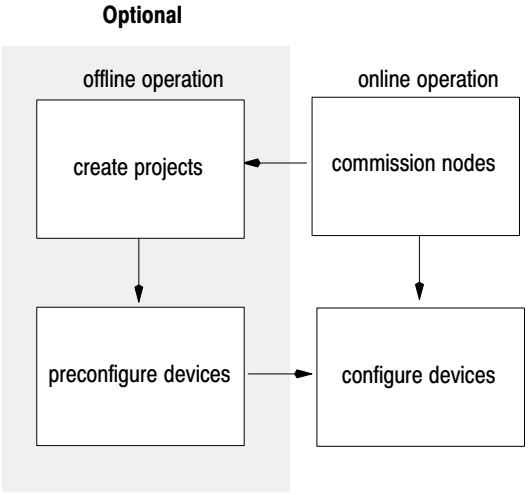
- organize data
- perform offline and online configuration
- save network information
- store data in a convenient user-oriented format
- recall previously saved settings for later use
- group devices in a logical manner
- add names and identification labels to networks and devices

Creating Projects

Devices reside within networks, which reside within projects. Your projects may be as simple or as complex as necessary.



You can create projects online, offline, or even preconfigure devices offline and then configure them online.



Device Preparation

The software requires you to configure devices in two basic configuration categories:

- node commissioning of data rate and node address
- device-specific information – for example:

  operating parameters
  - light/dark operation on a photoelectric sensor
  - acceleration rate/deceleration rate on a drive
  - input filter time on an input module

Device Configuration

Devices can be configured in one of three ways. Refer to your devices' manuals for the appropriate configuration method.

Configuration Method	Description
Mechanical switches	No other configuration is required when the node address and data rate are set with mechanical switches. However, you must provide information, such as data length, when prompted. **Important:** The software cannot override hardware settings.
Parameter object	Parameter objects are stored within the device. These parameters are only available when the software and the device are online. The parameter objects are uploaded from the device to create an EDS file.
Electronic data sheet (EDS) files	The device manufacturer provides an EDS file to the software allowing for online or offline configuration.
Node commissioning	You can set the node address and data rate in the device's firmware by selecting **Node Commissioning** from the *Utilities* menu.

Online or Offline Device Configuration

To configure devices	See chapter
Online	9
Offline	10

Standard Configuration

The software's enhanced mode, basic mode, and node commissioning provide these configurations.

Configuration Method	Description
User interface	The user interface allows you to enter device configuration information into a configuration tool.
DeviceNet communication services	The DeviceNet communication services provide an application layer protocol that builds valid DeviceNet messages containing configuration information to send to the device being configured.
DeviceNet interface modules RS-232 module (1770-KFD) pc card (1784-PCD)	The DeviceNet interface modules provide the logical and physical interface between the configuration tool and the DeviceNet link layer and physical layer.

Custom Configuration

Custom configuration is not covered in this manual. Refer to these publications included with your software for information on custom configurations.

- DeviceNet Scanner Module Configuration Manual (1747-SDN), publication 1747-6.5.2
- DeviceNet Scanner Module Configuration Manual (1771-SDN), publication 1771-6.5.118
- DeviceNet Adapter User Manual (1794-ADN), publication 1794-6.5.5

Configuration Methods

You can configure a device inside or outside of a project using one of the following methods.

Configuration method	Online	Offline	Read/Write (R/W)
Hardware (dip switches)		✓	R
Parameter values (product arrives with factory-set default values) • device configuration (enhanced mode)	✓		R/W
Electronic data sheets (on disk or downloaded from a bulletin board) • install EDS files • device configuration (enhanced mode)	✓	✓	R/W
Custom applications (built into the software) • device configuration	✓	✓	R/W

Important: The devices discussed in this manual are DeviceNet-compliant products; they may or may not be Rockwell Automation products.

About the File Extensions

The following table illustrates the various file extensions you may encounter when configuring your devices.

File extension	Meaning
.SM7	1771-SDN module configuration
.SL7	1771-SDN scanlist configuration
.LR7	1771-SDN scanlist report
.MR7	1771-SDN I/O mapping report
.SM4	1747-SDN module configuration
.SL4	1747-SDN scanlist configuration
.LR4	1747-SDN scanlist report
.MR4	1747-SDN I/O mapping report
.PRF	FLEX I/O configuration
.NXF	Network export file
.PJR	Project report
.CLC	Custom launch configuration
.DCF	Configured device file
.TXT	When proceeded by node name, configured device report
.NWR	Network Who report

Getting Started

What's in This Chapter

Read this chapter to install the software.

For information on	See page
What you need	2–1
Installing the software	2–1
Exiting the installation	2–5

What You Need

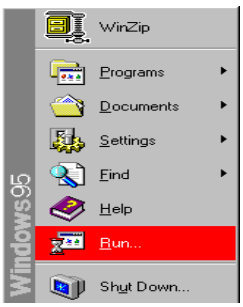
The software may be used with Windows (version 3.1 or later), Windows for Workgroups (version 3.11 or later), Windows 95™, or Windows NT™. The application requires approximately 1.65 megabytes of available hard-disk storage area.

Important: The hard-disk storage area requirements will increase as additional electronic data sheets (EDS) are added to the EDS library.

Installing the Software

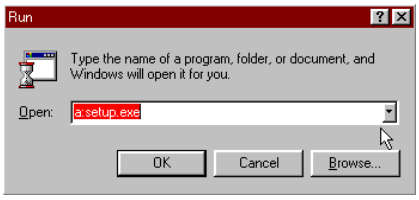
Follow these steps to install the software.

1. Start Windows.
2. Insert the first software disk into the 3.5" disk drive.
3. From the *Start* menu in the Program Manager, choose **Run**.



4. Type `a:setup.exe` at the Command Line.

If you inserted the software disk into another disk drive, use the appropriate drive letter instead of a :

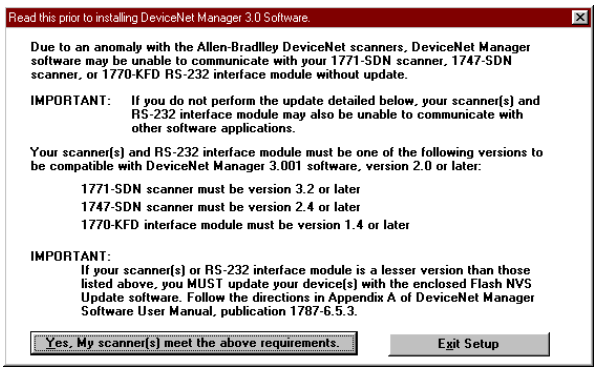


5. Choose OK

You see an installation screen indicating identifying DeviceNet Manager version 3.001.

Before installing the DeviceNetManager software, you must be certain that your scanner(s) and 1770-KFD RS-232 interface card(s) are the correct revision levels. See the Read This First document, publication 1787-6.5.3-RN1, included with the software for more information on checking your device's revision levels.

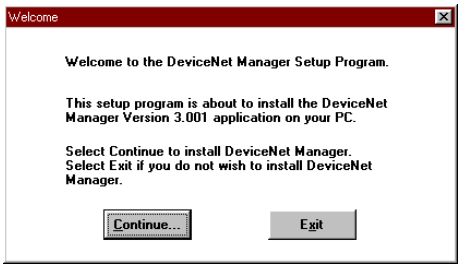
You see this warning screen.


Read this prior to installing DeviceNet Manager 3.0 Software.
Due to an anomaly with the Allen-Bradlley DeviceNet scanners, DeviceNet Manager software may be unable to communicate with your 1771-SDN scanner, 1747-SDN scanner, or 1770-KFD RS-232 interface module without update.
IMPORTANT: If you do not perform the update detailed below, your scanner(s) and RS-232 interface module may also be unable to communicate with other software applications.
Your scanner(s) and RS-232 interface module must be one of the following versions to be compatible with DeviceNet Manager 3.001 software, version 2.0 or later:
1771-SDN scanner must be version 3.2 or later
1747-SDN scanner must be version 2.4 or later
1770-KFD interface module must be version 1.4 or later
IMPORTANT:
If your scanner(s) or RS-232 interface module is a lesser version than those listed above, you MUST update your device(s) with the enclosed Flash NVS Update software. Follow the directions in Appendix A of DeviceNet Manager Software User Manual, publication 1787-6.5.3.
Yes, My scanner(s) meet the above requirements.
Exit Setup

6. If your devices are at the correct revision levels, choose

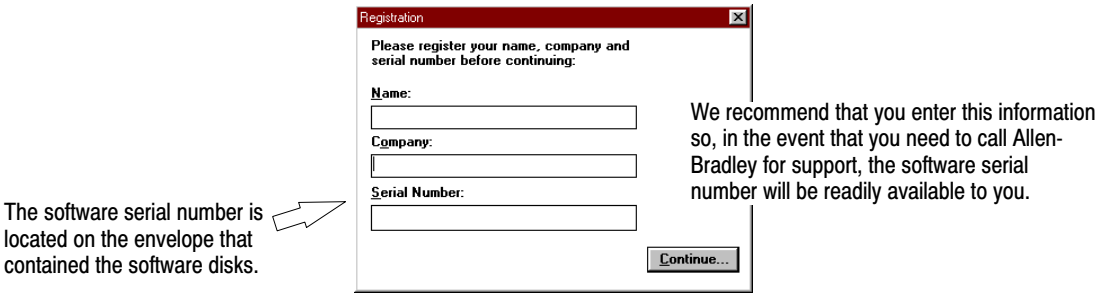
To go back and check the revision levels, choose

You see this screen.


Welcome
Welcome to the DeviceNet Manager Setup Program.
This setup program is about to install the DeviceNet Manager Version 3.001 application on your PC.
Select Continue to install DeviceNet Manager.
Select Exit if you do not wish to install DeviceNet Manager.
Continue...
Exit

7. Choose **Continue** to proceed with the installation process.

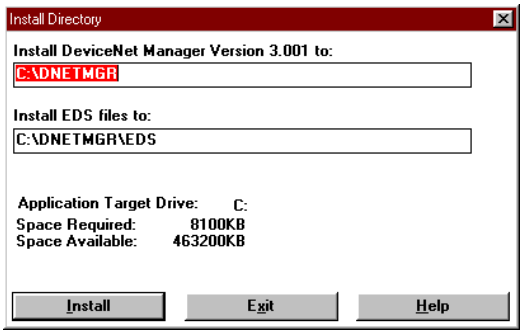
8. Click on the respective fields and enter your name, your company's name, and the serial number noted on the disk label.


Registration
Please register your name, company and serial number before continuing:
Name:
Company:
Serial Number:
Continue...
The software serial number is located on the envelope that contained the software disks.
We recommend that you enter this information so, in the event that you need to call Allen-Bradley for support, the software serial number will be readily available to you.

9. Choose

10. You see the registration screen with the information you entered. Verify the information is correct and choose **OK**.

You see this installation screen.

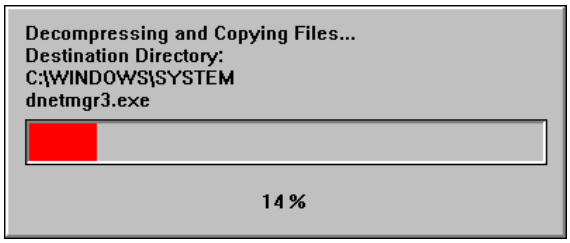


The software creates a default directory on the host hard drive called *DNETMGR* and a subdirectory for all EDS files called *DNETMGR\EDS*.

11.

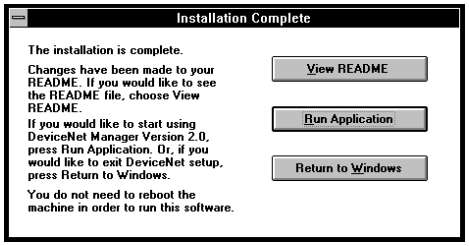
If you want to	Then
Use the default settings	Choose
Change the default settings	a. Make any changes b. Choose
Exit the installation process	Choose
Find out more about this installation	Choose

When you choose **Install**, you see this installation screen.



12. When you see the prompt for disk 2, insert the second disk into the disk drive and choose OK .

13. Once the installation is complete, choose the appropriate button to either look at the README notes, run the software, or return to Windows.


Installation Complete
The installation is complete.
Changes have been made to your README. If you would like to see the README file, choose View README.
If you would like to start using DeviceNet Manager Version 2.0, press Run Application. Or, if you would like to exit DeviceNet setup, press Return to Windows.
You do not need to reboot the machine in order to run this software.
View README
Run Application
Return to Windows

The README file contains last minute changes to the software or the DeviceNetManager Software User Manual.

To start DeviceNetManager Software version 3.001 choose **Run Application**.

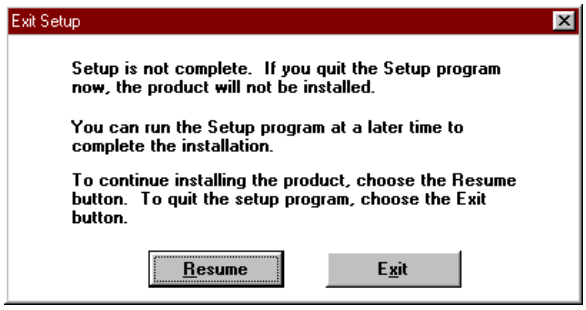
Once the installation procedure is complete, an icon will appear in your *Start* menu in the *Programs* section.

ATTENTION: DeviceNetManager software, version 3.001, (dnetmgr3.exe) does *not* overwrite your previous version of DeviceNetManager software (dnetmgr.exe) or (dnetmgr2.exe). If you need to go back to your previous version of the software, run the executable (dnetmgr.exe) or (dnetmgr2.exe) in the program manager.

Exiting the Installation

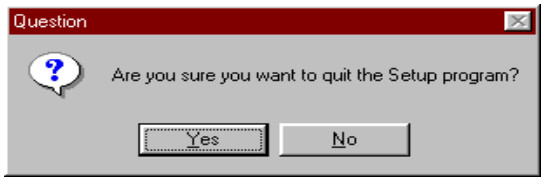
You may exit the installation process at any time by choosing Exit or Exit F3

If you choose Exit F3, you will see this screen.


Exit Setup
Setup is not complete. If you quit the Setup program now, the product will not be installed.
You can run the Setup program at a later time to complete the installation.
To continue installing the product, choose the Resume button. To quit the setup program, choose the Exit button.
Resume
Exit

If you want to	Choose
Return to the installation process	Resume
Exit the installation	Exit

If you choose Exit, you will see this screen.



To quit the setup program, choose Yes

To continue with the setup program, choose No

Setting Up Your Online Connection

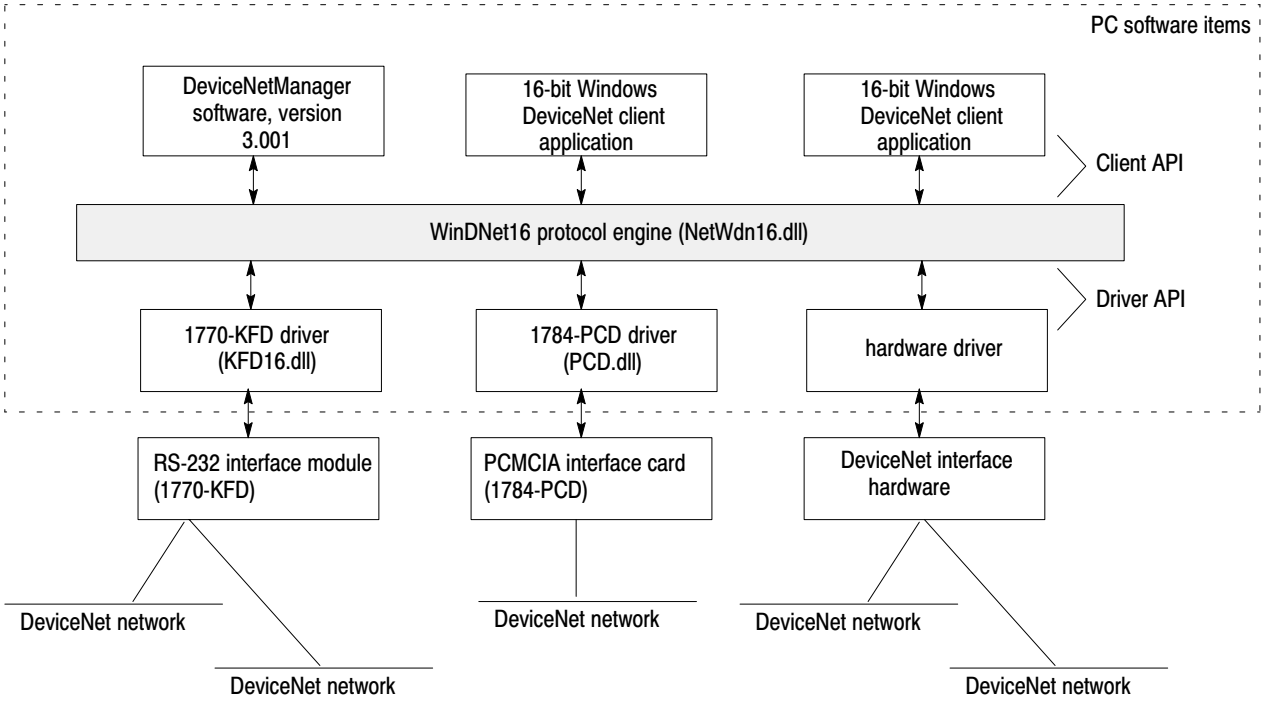
What's in This Chapter

Read this chapter to set up your online connection.

For information on	See page
About the DeviceNet Communication	3–1
Device connections	3–2
Connecting the RS-232 interface module	3–4

About the DeviceNet Communication

The following diagram illustrates how several drivers may communicate on the DeviceNet network at one time.



DeviceNetManager software will work with any interface card that is compliant with the WinDNet16 protocol engine. The WinDNet16 protocol engine is included and installed with this version of DeviceNetManager software.

Hardware driver software comes with the interface card and must be installed per the interface card manufacturer's instructions. Verify that your hardware driver is compatible with the WinDNet16 protocol engine and the Windows platform you are running (Windows 3.1x, Windows 95, or Windows NT).

Important: This version of the software includes and will install the 1770-KFD driver for you. This driver is compatible with all three Windows platforms.

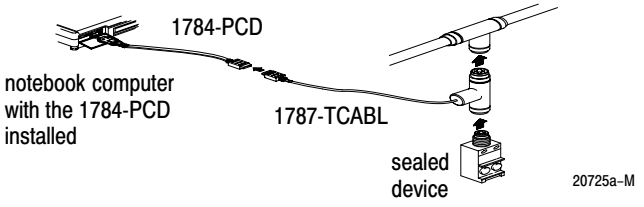
Device Connections

PCMCIA interface (1784-PCD)

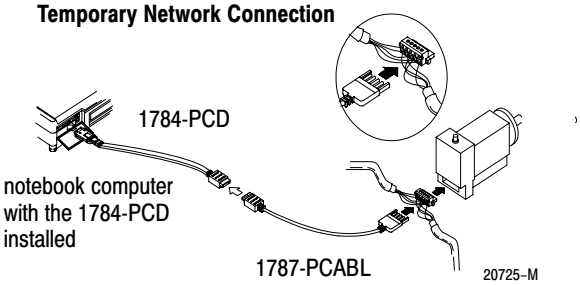
The PCMCIA interface card (1784-PCD) enables a notebook computer to communicate on the DeviceNet network. The 1784-PCD card allows for both point-to-point and network connections. Refer to the DeviceNet PC Card Installation Instructions, publication 1784-5.29, for more information.

Important: Verify that your hardware driver is compatible with the WinDNet16 protocol engine and the Windows platform you are running (Windows 3.1x, Windows 95, or Windows NT).

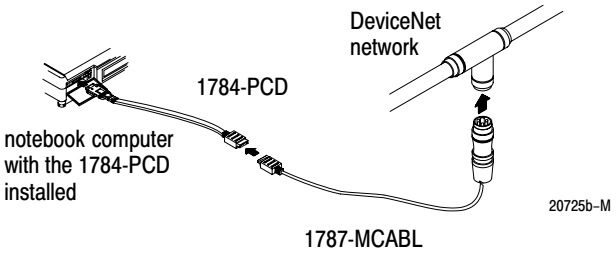
Point-to-Point Connection



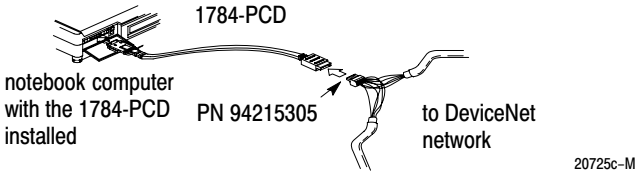
Temporary Network Connection

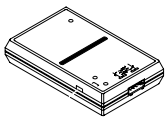


Network Connection



Network Connection



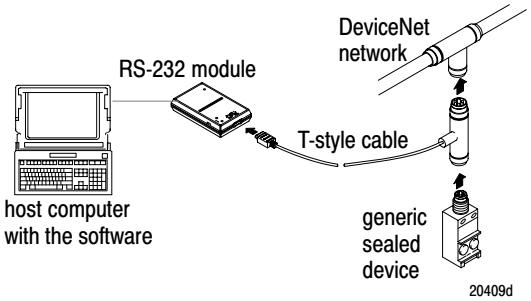


RS-232 module
(1770-KFD)

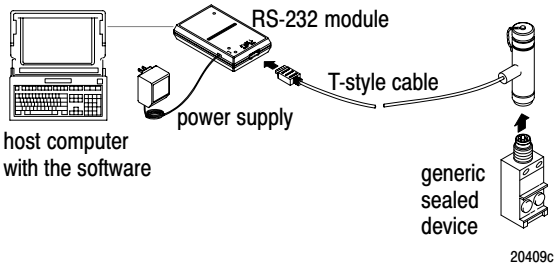
The RS-232 module (1770-KFD) can supply power in a wall-adapter power supply to a device in a point-to-point connection or draw its power from the DeviceNet network in a network connection.

Point-to-Point Connections

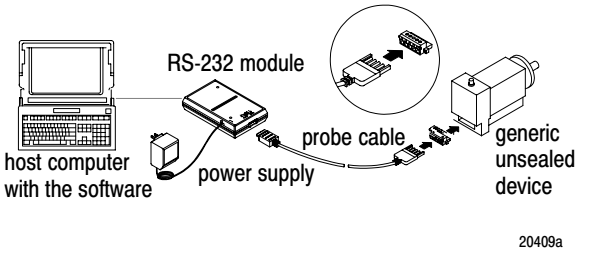
Power from Network



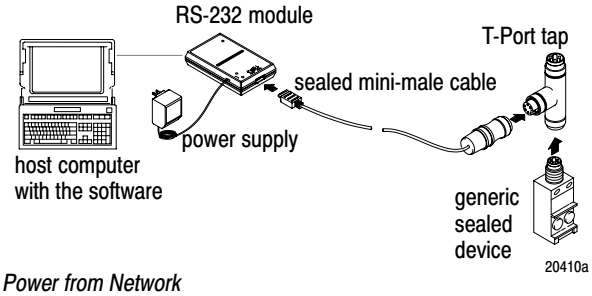
Power from 9V DC Power-Supply Adapter



Power from 9V DC Power-Supply Adapter

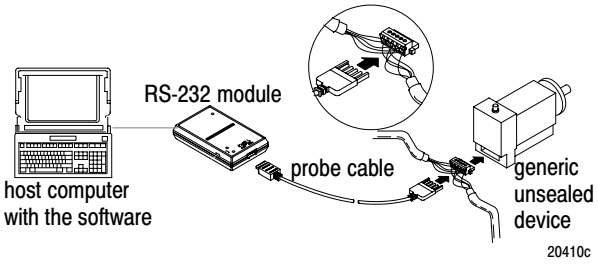


Power from 9V DC Power-Supply Adapter

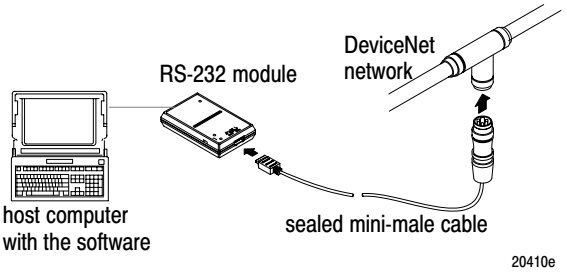


Network Connections

Power from Network



Power from Network

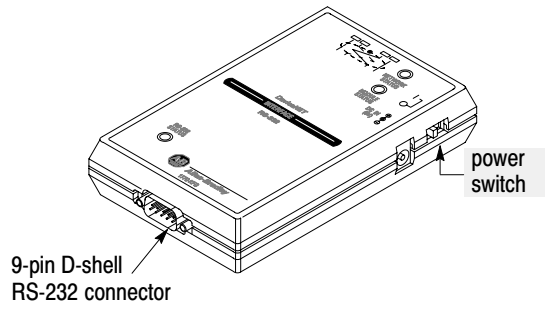


Connecting the RS-232 Interface Module

You must have an RS-232 interface module connected and supplied with power to run the software. Follow the appropriate directions to power your RS-232 interface module from the network or a 9V dc power-supply adapter.

Power From Network

1. Set the power switch to 1.



2. Insert the 9-pin D-shell RS-232 connector into the bottom of the RS-232 interface module.

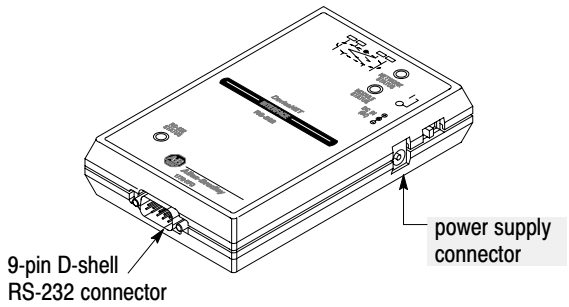
3. Insert the other 9-pin D-shell RS-232 connector into a serial port of your computer.

4. Insert the network's 5-pin unsealed connector into the top of the RS-232 interface module. This connects the RS-232 interface module onto the trunk line enabling communication between devices on the network.

If the module status indicator is	Then
Blinking green	You have connected properly
Not blinking green	See the DeviceNet RS-232 Interface Module Installation Instructions, publication 1770-5.6

Power From 9V DC Power-Supply Adapter

1. Insert the power-supply connector into the appropriate port.



2.

Adapter type	Plug your adapter into a
U.S. 9V dc power-supply adapter	120V ac wall outlet
Global 9V dc power-supply adapter	90 to 260V ac wall outlet

If the module status indicator is	Then
Blinking green	You have connected properly
Not blinking green	See the DeviceNet RS-232 Interface Module Installation Instructions, publication 1770-5.6

3. Insert the 9-pin D-shell RS-232 connector into the bottom of the RS-232 interface module.

4. Insert the other 9-pin D-shell RS-232 connector into a serial port of your computer.

5. Insert the network's 5-pin unsealed connector into the top of the RS-232 interface module. This connects the RS-232 interface module onto the trunk line enabling communication between devices on the network.

Working with Projects and Networks

What's in This Chapter

Read this chapter to begin working with projects and networks.

For information on	See page
How projects benefit you	4–1
Using the project menu	4–1
Creating a new project	4–2
Adding networks to a project	4–4
Opening an existing project	4–6
Saving a project	4–7
Editing network information	4–8
Moving network files	4–10
Copying network files	4–12
Editing project information	4–14
Exporting a network to a file	4–15
Printing a project to a file	4–16
Printing a project's network topology	4-17

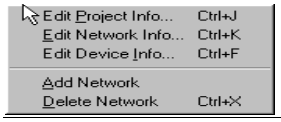
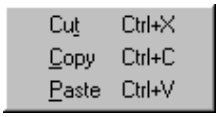
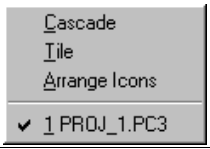
How Projects Benefit You

The creation and use of a project gives you the ability to:

- configure devices offline and online
- store data in a convenient user-oriented format
- recall previously saved settings for later use
- group devices in a logical manner
- add names and identification labels to networks and devices

Using the Project Menu

When you work within a project, the menu bar changes to include *Project*, *Edit*, and *Window* menus.

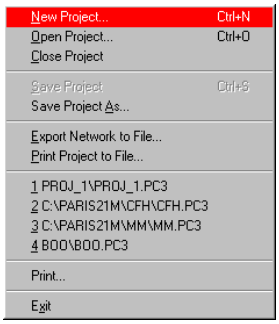
Menu	Description
Project 	The *Project* menu allows you to edit project, network, or device information. You can also add and delete networks with the *Project* menu. You must have a project open or the *Project* menu will not appear.
Edit 	The *Edit* menu allows you to move, copy, or delete projects, networks, and/or devices.
Window 	The *Window* menu allows you to switch between open windows to work on more than one project at a time.

Creating a New Project

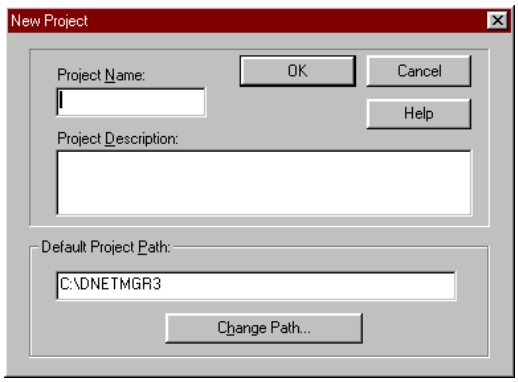
Follow these steps to create a new project.

1. From the *File* menu, choose **New Project**.

File



You see this screen.



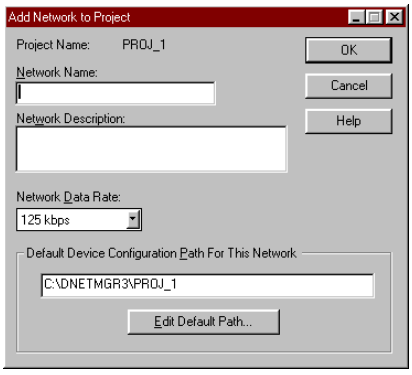
2. Choose the respective fields and enter a project name (up to eight characters) and a project description (optional).

3.

Do you want to use the default project path?	Choose
Yes	Go to step 4.
No	Change Path... You see the Define Project Path dialog box. Change your project path. To save your network project path, choose OK To discard any changes, choose Cancel You return to the New Project screen.

4. To save your new project, choose OK

   You see this screen.



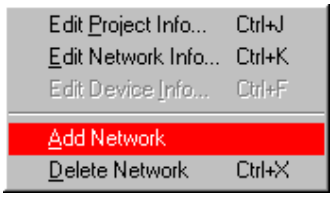
5. Go to step 3 on page 4–4.

Adding Networks to a Project

Follow these steps to add networks to your projects.

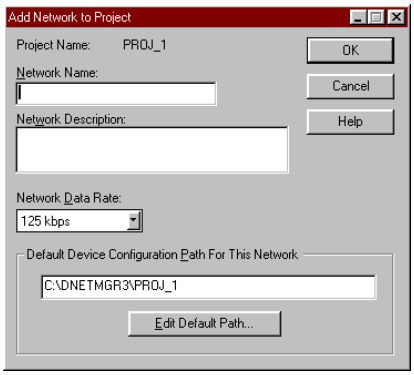
1. Select the project you want to add a network to by clicking on it to highlight it.
2. From the *Project* menu, choose **Add Network**.

Project



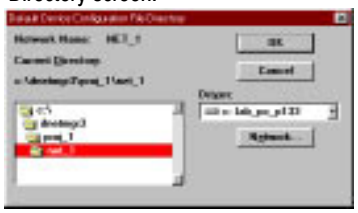
You can also choose **Add Network** From the *Project Details* menu by clicking the right mouse button when the project is selected.

You see this screen.



3. Choose the respective fields and enter a network name (up to eight characters) and a network description.

4.

Do you want to use the default configuration path?	Choose
Yes	OK
No	Edit Default Path... You see the Default Device Configuration File Directory screen.  Change your network path. To save your network project path, choose OK To discard your changes, choose Cancel You return to the New Project screen.

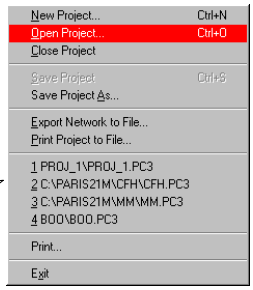
5. To add additional networks to this project, repeat steps 1-4.

Opening an Existing Project

Follow these steps to open an existing project.

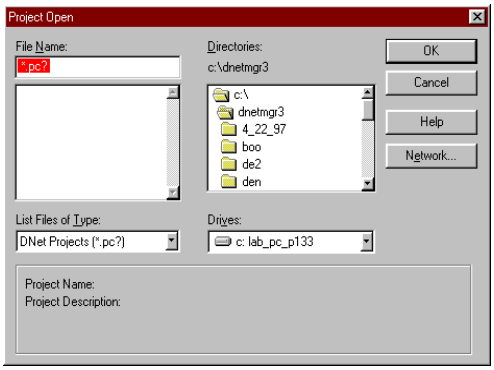
1. From the *File* menu, choose **Open Project**.

File



The software displays the four most recently opened files on the File menu. You can open a project from here by clicking on the file.

You see this screen.



2. To open a project, double-click on the file name or click once on the file name and then choose OK

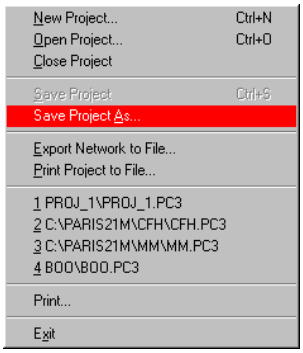
Saving a Project

Follow these steps to save your project.

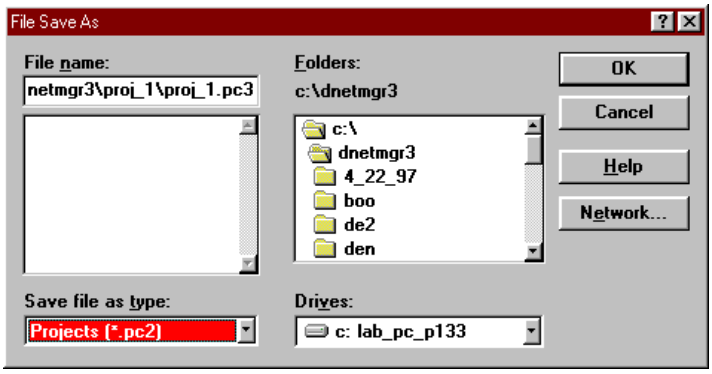
Important: DeviceNetManager software, version 3.001, saves files with *.pc3 extensions. If you are using project files created in earlier versions without *.pc3 extensions, you can use these files by opening them in version 3.001 and saving them in the *.pc3 format.

1. From the *File* menu, choose **Save Project As**.

File



You see this screen.



2. To save a project, enter a file name in the file name field and choose the directory to which the project will be saved.
3. Choose

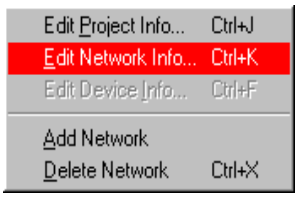
Editing Network Information

Follow these steps to edit network information.

Important: You must be in an open project with the network you wish to edit highlighted.

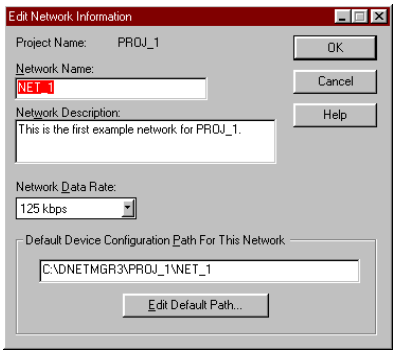
1. Select a network to edit by clicking on it.
2. From the *Project* menu, choose **Edit Network Info**.

Project



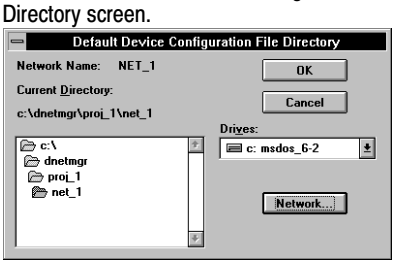
▶ You can also choose **Edit Network** from the *Project Details* menu by clicking the right mouse button

You see this screen.



3. To make changes to the network name or the network description, click on the respective fields and make any necessary changes.

4.

Do you want to use the default project path	Choose
Yes	OK
No	Edit Default Path... You see the Default Device Configuration File Directory screen.  Change your network path. To save your network project path, choose OK To discard your changes, choose Cancel You return to the New Project screen.

Cutting and Pasting Network Files

Follow these steps to cut and paste network files.

Important: You must be in an open project to cut network files.

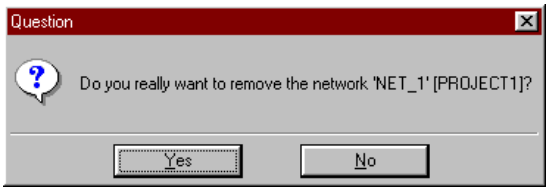
1. Select the network you want to cut by clicking on it.

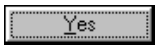
Important: Make sure no devices are selected when you select the network to cut. If a device is selected in the topology while the network is selected, the device will be cut instead of the network.

2. From the *Edit* menu, choose **Cut**.

Edit

You see this screen:



3. Choose 

if you want to cut the network file.

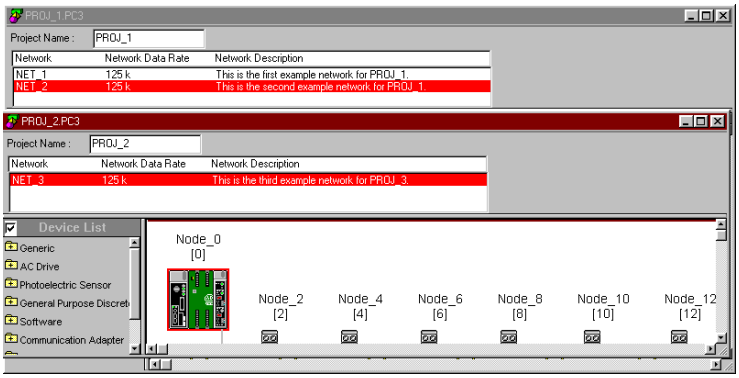
The selected network file will disappear from the project details screen. If you want to replace the network file you have cut, choose **Paste** from the *Edit* screen while the originating project is selected.

Important: You must paste a network file before you cut or copy any other network file or the network file you intend to paste will be lost.

▶ To cut a network file out of a project, click the right mouse button and choose **Delete Network** from the *Project Details* menu. You will not be able to paste a file once you remove it.

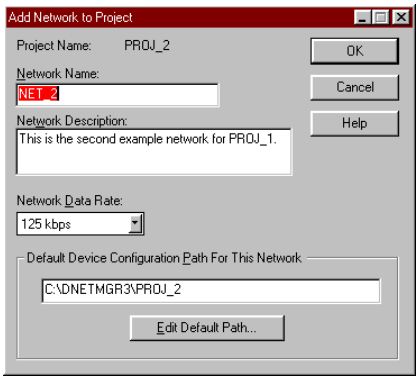
If you want to move a network file to a different project, perform steps 1 and 2 for cutting a network file and then follow this procedure.

1. Choose the project to which you wish to move the network by clicking on it so that it is highlighted.



2. From the *Edit* menu, choose **Paste** to place the network file in a different project

   The network you selected will now appear in the project details section of the highlighted project along with this screen.



3. Verify that the information is correct and make any necessary changes.

To	Choose
Approve the network information	OK
Cancel the move process	Cancel

Copying Network Files

Follow these steps to copy your network files.

Important: You must be in an open project to copy files.

1. Click on the network you want to copy.

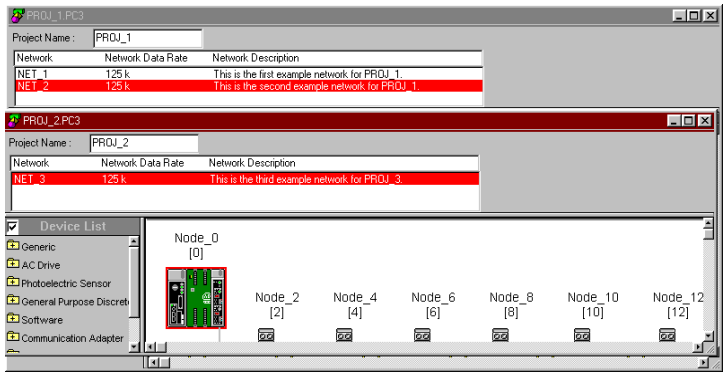
Important: Make sure no devices are selected when you select the network to copy. If a device is selected in the topology while the network is selected, the device will be copied instead of the network.

2. From the *Edit* menu, choose **Copy**.

Edit

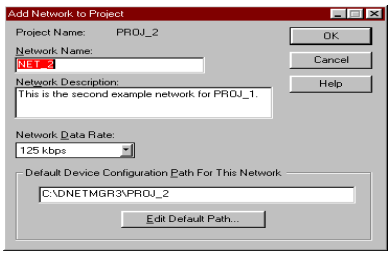
3. Choose the project you wish to copy the network to by clicking on it so that it is highlighted.

Notice the title bar of PROJ_2 is highlighted.



4. From the *Edit* menu, choose **Paste** to copy the network

You see this screen.



5. Verify that the information is correct and make any necessary changes.

To	Choose
Approve the network information	OK
Cancel the copy process	Cancel

6. To copy the network to another project, repeat steps 3 -5.

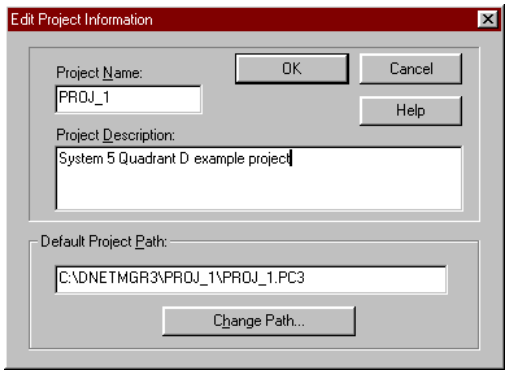
Editing Project Information

Follow these steps to edit project information.

1. From the *Project* menu, choose **Edit Project Info**.

Project

You see this screen.



2. To make changes to the project name or project description, choose the respective fields and make any necessary changes.

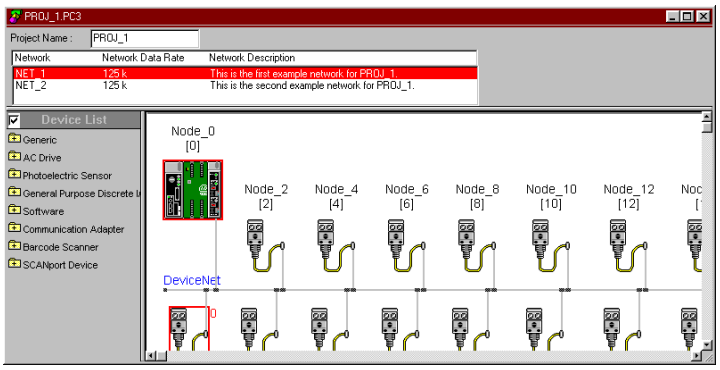
3.

Do you want to use the default project path?	Choose
Yes	OK
No	Change Path... You see the Define Project Path screen. Change your project path. To save your project path, choose OK To discard your changes, choose Cancel You return to the New Project screen.

Exporting a Network to a File

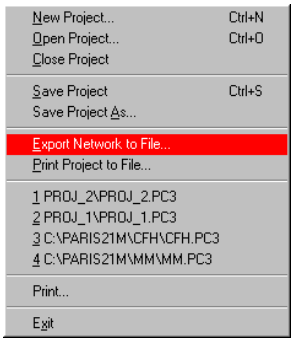
Follow these directions for external applications that require an export file. The exported network file is an ASCII file containing the node name and address, bus type and node identification for your project that can be used by other applications.

Important: You must be within a project to export a file.

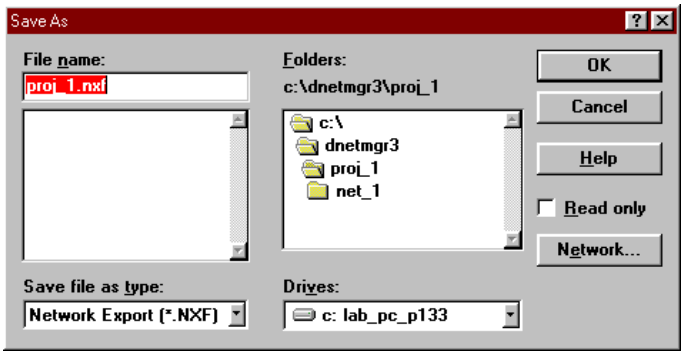


1. From the *File* menu, choose **Export Network to File**.

File



You see this screen.



2. Choose the directory and enter a file name under which the network will be saved.
3. Choose OK

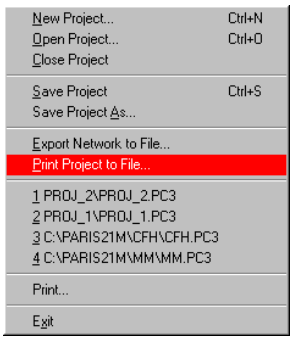
   You return to the project screen.

Printing a Project to a File

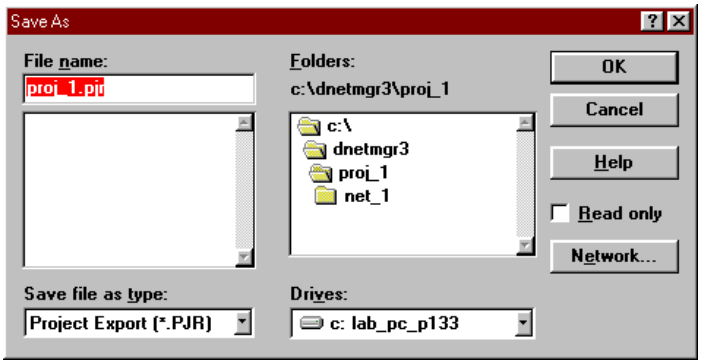
Follow these directions to print a project to a file. The project file is an ASCII file containing node names, vendor names, product names and node addresses of the devices in your project that can be used by other applications.

1. From the *File* menu, choose **Print Project to File**.

File



You see this screen.



2. Choose the directory and enter a file name under which the network will be saved.
3. Choose OK

   You return to the project screen.

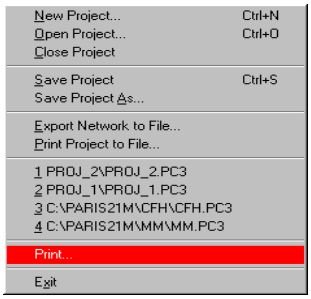
   With your project now saved to an ASCII file, you may use this file with other applications such as text editors.

Printing a Project's Network Topology

Follow these directions to print a project's network topology. The project's topology provides a paper copy printout of the network topology. A key to indicate the product name, vendor, type, revision, description and serial number of each node is also included.

1. From the *File* menu, choose **Print**.

File



2. Arrange your printer to your specifications and choose

to print.

Adding Devices to a Project/Network

What's in This Chapter

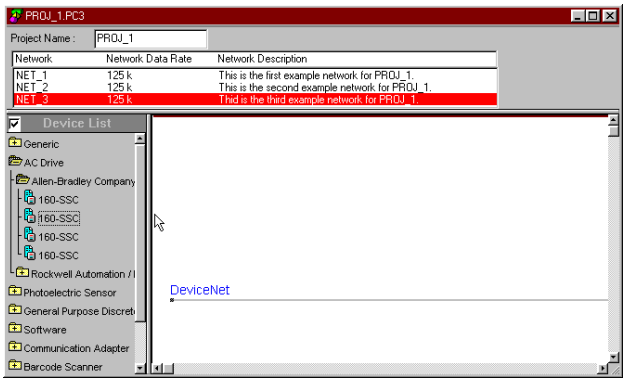
Read this chapter to add devices to a DeviceNet network.

For information on	See page
Adding devices to a network	5–1
Editing device information	5–3
Moving devices	5–4
Copying to a different project/network	5–5
Copying devices to a different project or network	5–8
Deleting devices	5–7
Going online	5–9
Online operation	5–11
Building a network online	5–11

Adding Devices to a Network

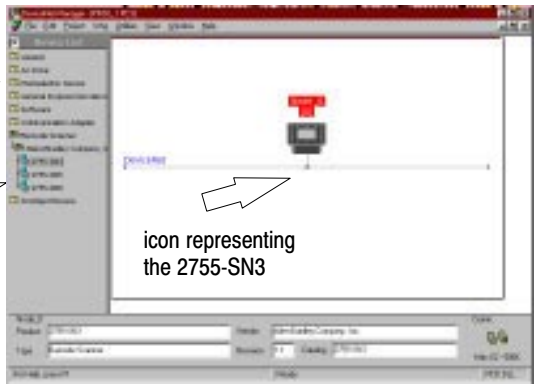
After you've created a project (see page 4-2), you need to select and add devices to the network(s) within that project.

1. From the device list, choose the device you want to add in the device list by double-clicking on it.
2. Choose the vendor name of the device you want by double-clicking on the vendor name.



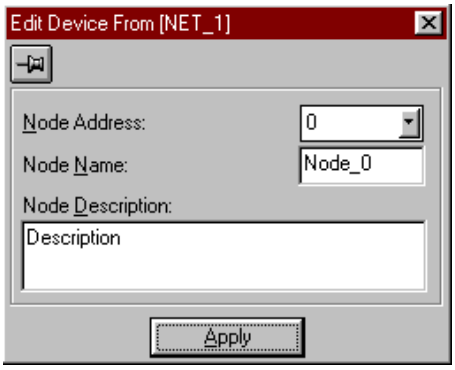
3. Choose the device you wish to add in the device list by clicking on it and drag it onto the network screen.

An icon for your selected device is now displayed on the network screen.



NOTE: Click the check mark to hide the vendor name in the device list.

You then see this screen in the upper left corner of the project details screen.



4. Choose the node address in the node address field. Click on the respective fields and enter a node name (up to eight characters) and a node. When you are finished choose

.

   Note: The node address automatically increments to the next unused node address. The node name defaults to "Nodexx" with "xx" indicating the node number. Also, the node name and address appears on the icon on the network.

5. Repeat steps 1 - 4 until you've added all of the devices to the network.

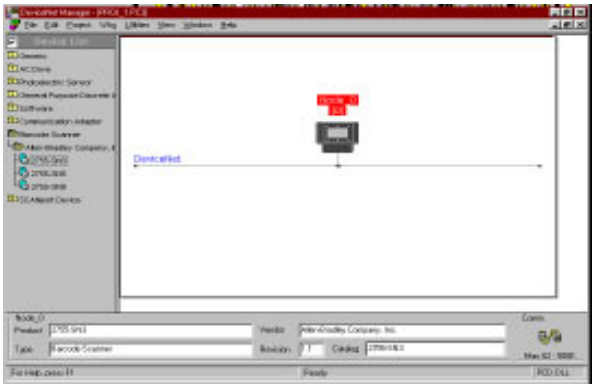
Adding a Device Not Listed in the Product Field

Refer to Creating an EDS Stub Online, page 11-6, in order to add devices that are not listed in the product field.

Editing Device Information

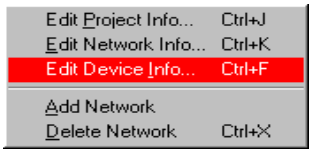
You can edit the device information by following these steps.

1. Choose the device you wish to edit in the network screen by clicking on it.



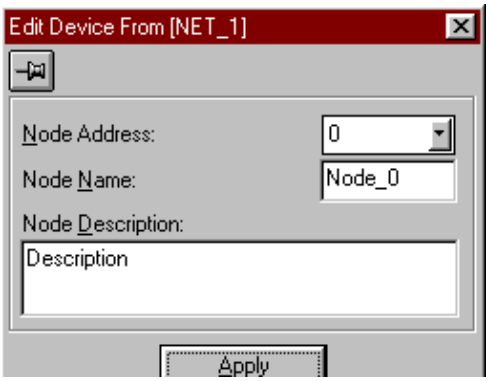
2. From the *Project* menu, choose **Edit Device Info**.

Project



▶ You can also choose **Edit Device** in the *Device Details* menu by clicking the right mouse button while your device is selected.

You see this screen.



3. Choose the respective fields and edit the node name and/or node description.

Important: You cannot modify the network name.

4. Verify the information is correct and choose

.

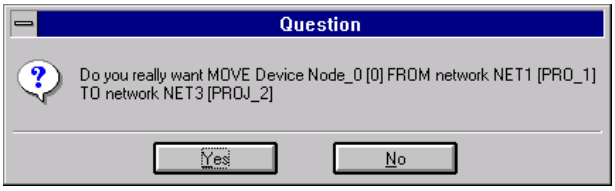
Moving Devices

Follow these steps to move devices.

Important: You must be in an open project to move devices.

1. Open the project you want to move the device to.
2. Choose the device you want to move in the originating network by clicking on it and drag it to the desired project's network screen.

   You see this screen.



3.

Is the information correct?	Choose
Yes	Yes
No	No Repeat steps 2 - 4 to choose the proper devices and projects.

The device is now displayed in the network you placed it.

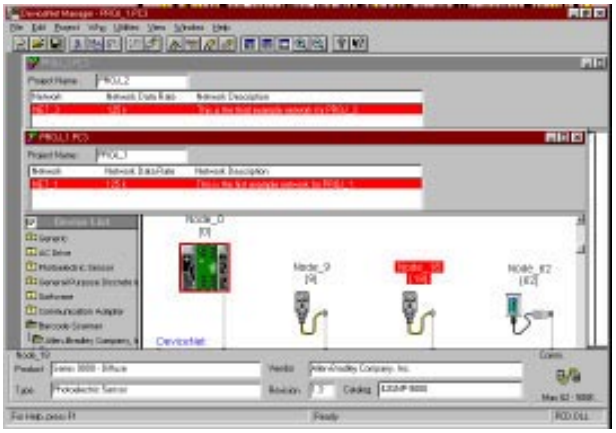
Copying Devices to a Different Project/Network

If you want to copy a device into a different project/network, you must first open the project/network into which you wish to copy your device.

Follow these steps to copy your devices to other networks.

Important: You must be in an open project to copy devices.

1. Choose the device you want to copy by clicking on it.



Node 18 in PROJ_1 is highlighted while PROJ_2 is open.

2. From the *Edit* menu, choose **Copy**.

Edit

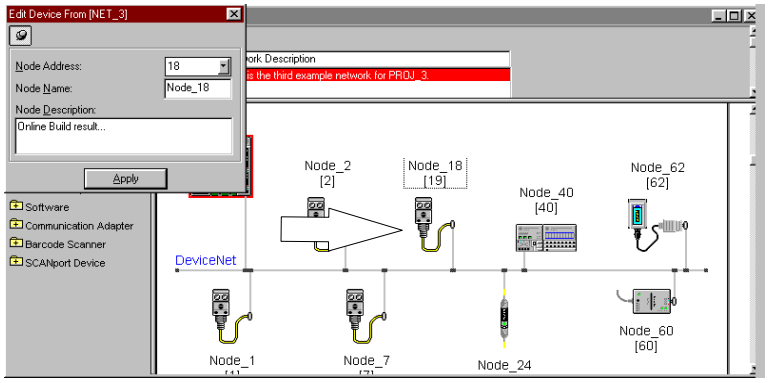
▶ You can also choose **Copy** from the *Device Details* menu by clicking the right mouse button when the device is selected.

3. Choose the project and network to which you wish to copy to by clicking project and network so it is highlighted.
4. From the *Edit* menu, choose **Paste**.

You see this screen:

Choose the node address and name for the new device in PROJ_2.

Node 18 now appears in PROJ_2.

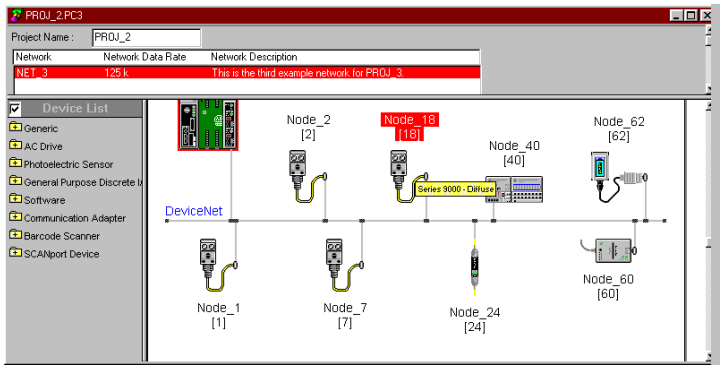


5. Fill-in the proper node information for the new network/project.
6. When the information is correct, click Apply.
7. To copy another device to the same network, repeat steps 1-6.

Copying Devices in the Same Project/Network

If you wish to copy the device in the same project and network, follow this procedure.

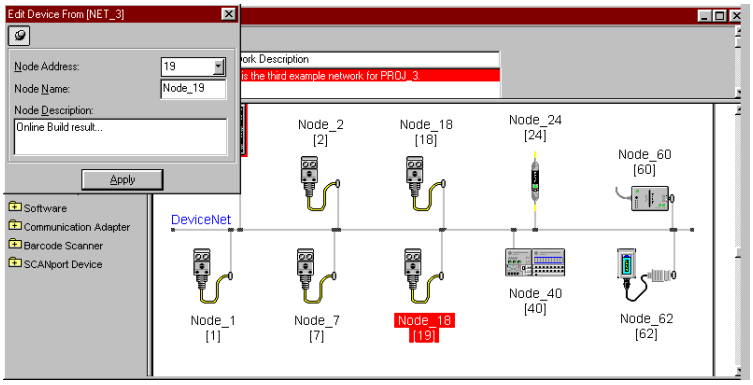
1. Choose the device you want to copy by clicking on it.



2. From the *Edit* menu, choose **Copy**.

▶ You can also Choose **Copy** from the *Device Details* menu by clicking the right mouse button when the device is selected.

3. From the *Edit* menu, choose **Paste** . You see this screen with the device repeated in the network.



4. Complete the changes in the Edit Device Information screen and and choose

.

Deleting Devices

Follow these steps to remove devices from networks.

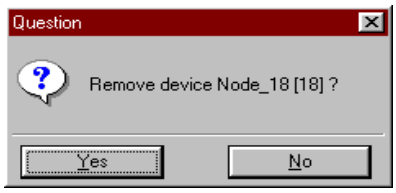
Important: You must be in an open project to delete devices.

1. Choose the device you wish to remove by clicking on it.
2. From the *Edit* menu, choose **Cut**.

Edit

▶ You can also choose **Remove Device** from the *Device Details* menu by clicking the right mouse button when the device is selected.

You see this screen.



3. To remove the device, choose

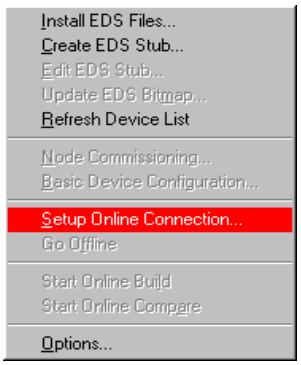
.

Going Online

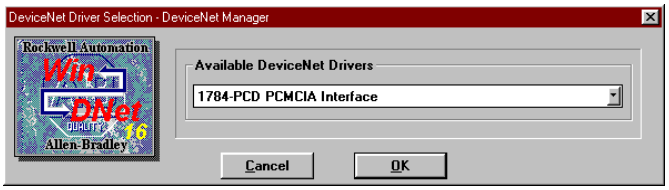
Follow these directions to go online. You may configure your devices before or after you are online.

1. From an open project, select the network you would like to put online by clicking on it.
2. From the *Utilities* menu, choose **Setup Online Connection**.

Utilities



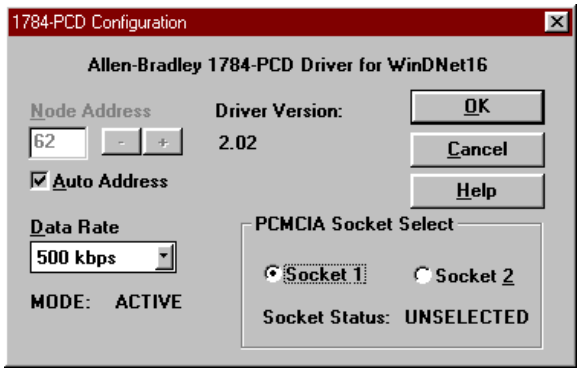
You see this screen.



3. From the pull-down menu, choose your driver.
4. Choose OK

You see a screen similar to this one depending upon your driver.

The software automatically enters your last used node address and data rate for your 1784-PCD driver. If you haven't configured your driver, the default node address (62) and data rate (500 kbps) will appear.

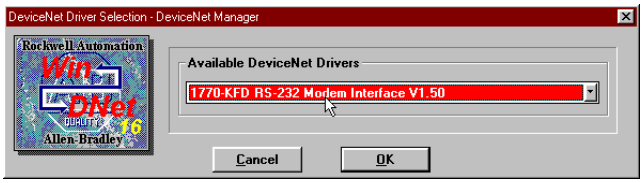


ATTENTION: Make sure that all devices are set to the proper data rate. Attempting to go online at the wrong data rate may cause some or all devices on the network to fault.

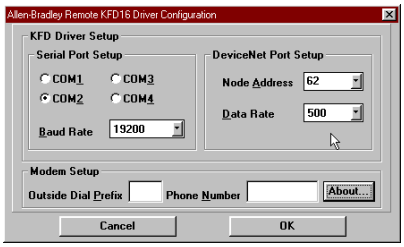
5. Select the proper settings and choose OK

Going Online Using 1770-KFD Modem Support

To go online using the 1770-KFD with modem support, set-up your online connection like above but choose the following driver.



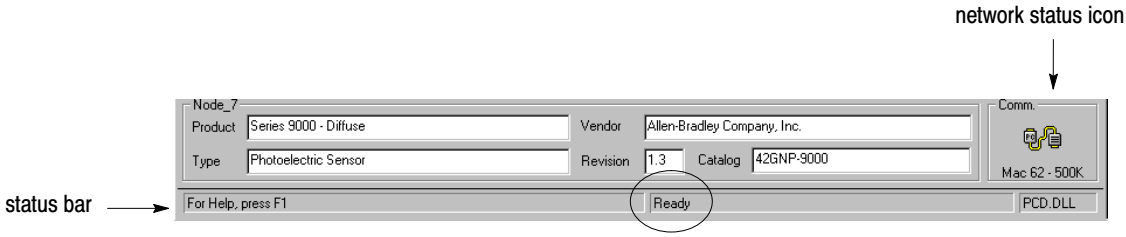
Choose **OK** and you will see this screen.



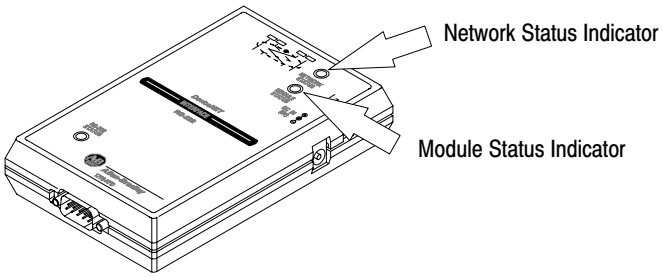
Verify the KFD setup information and enter the modem set-up information. When all information is correct, choose **OK**.

Online Operation

Once you are online, the status bar indicates **Ready**. Also, the network status icon indicates a connection.



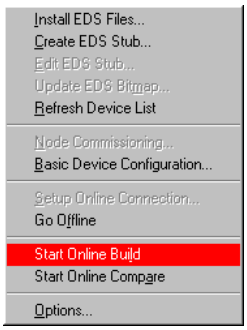
If you are using the RS-232 interface module, make sure that the Network Status Indicator is blinking green and the Module Status Indicator is solid green.



Building a Network Online

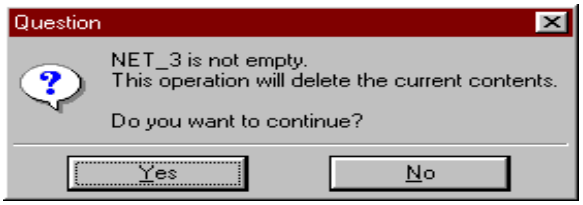
To build a network online, choose **Start Online Build** from the *Utilities* menu.

Utilities



▶ You can also go online by choosing **Start Online Build** in the *Topology* menu by clicking the right mouse button while the cursor is in the network area without any devices selected.

If you see this screen, the network you've chosen is not empty and the build will delete the current contents.



To continue with the online build, choose Yes

When the build is complete you will see the available devices within the DeviceNet network. Then this screen will appear:

To upload DeviceNet Scanner Configuration, choose Yes and enter the desired information.

Monitoring Parameters and Using the Internal Value

What's in This Chapter

Read this chapter to monitor device parameters and use the internal value.

For information on	See page
Monitoring parameters	6–1
Using the internal value	6–3

Monitoring Parameters

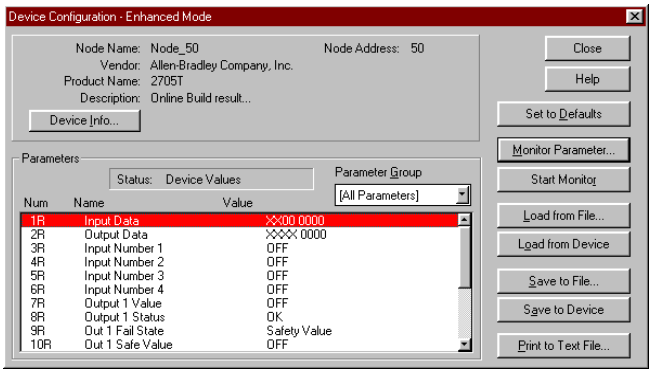
Follow these directions to monitor parameters as they are being checked by the DeviceNet™ network.

Important: You must be online to monitor parameters (see chapter 5).

Monitoring All Parameters

1. Choose a device to monitor by double-clicking on the device that you want to monitor in the network screen.

   You see a screen similar to this one.



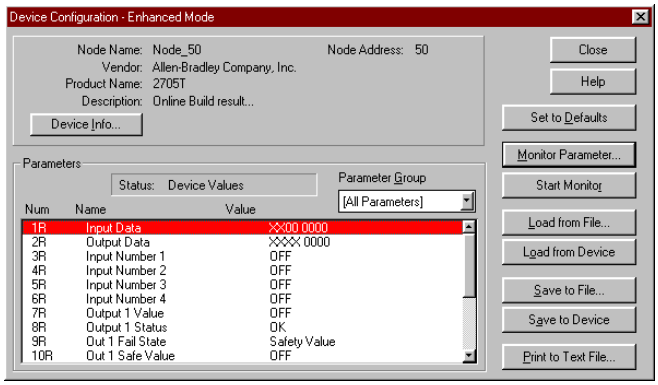
2. Choose

   Notice that status field blinks ‘‘Monitoring” and an asterisk circulates down as each parameter is checked repeatedly.

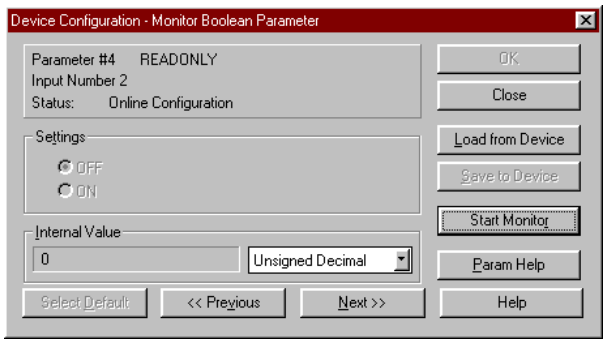
3. To stop monitoring the parameters, choose

Monitoring Individual Parameters

1. To monitor an individual parameter, double-click on the parameter from the configuration screen.



You see a screen similar to this one, depending on the type of parameter you chose.



2. Choose

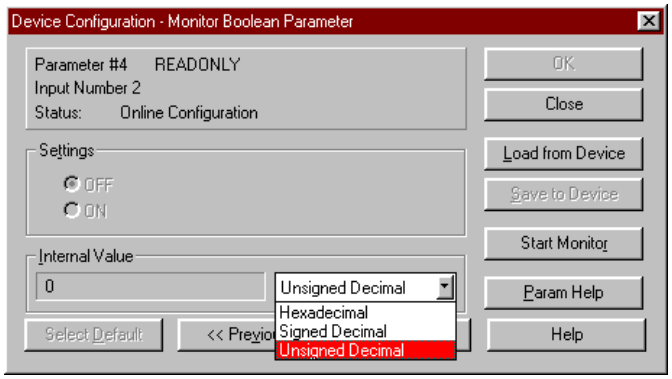
The software monitors the settings of the parameter.

3. To stop monitoring the parameter, choose

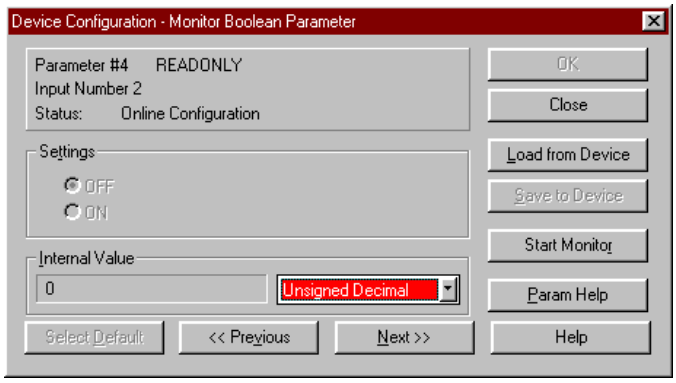
Using the Internal Value

You can change the way an internal value for a parameter is displayed.

From the modify parameter screen, scroll down the list in the internal value field and click once on the value type you desire.



Notice the internal value changes to the value type you selected.



Commissioning Nodes

What's in This Chapter

Read this chapter to commission the node address and data rate of a device when adding it to a DeviceNet network.

Commissioning Nodes

All nodes must be commissioned prior to being used on a DeviceNet network.

Important: Every node added to a DeviceNet network must be set to:

- a unique node address (0 – 63)
- the same data rate (125, 250, or 500k bit/s)

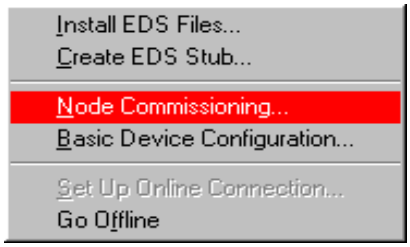
How to Commission Nodes

You must be online and in a point-to-point connection to commission a node (see chapter 5).

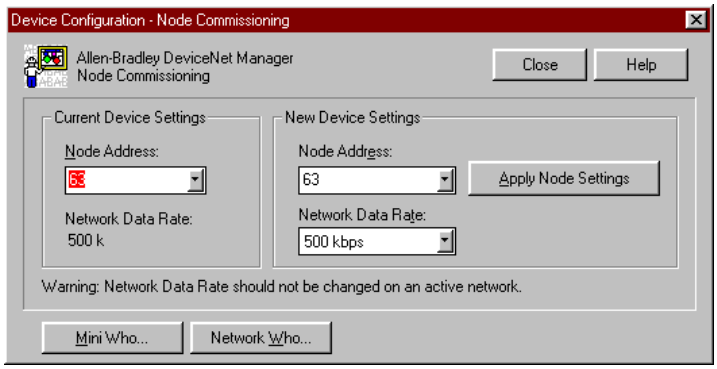
Important: You cannot be within a project to commission nodes.

1. From the *Utilities* menu, choose **Node Commissioning**.

Utilities



You see this screen.



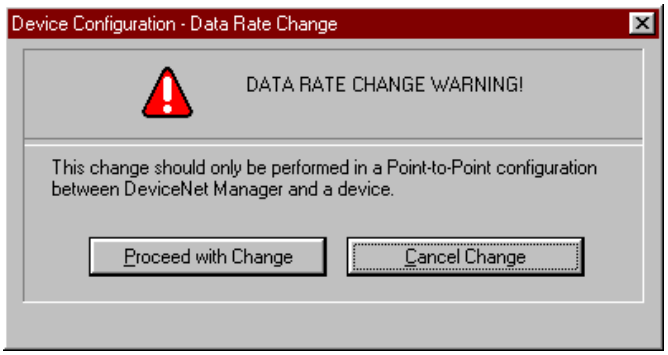
2. Select the current node address of the device you want to commission in the current device settings section.

▶ If you aren't sure of the node address of the device you want to commission, choose Network Who...

3.

Is the information correct?	Then
Yes	Choose Close
No	To change the node address, select the new node address in the new device settings section. **Important:** You must change the data rate at the same time as choosing a new node address. To change the data rate, select the new data rate in the new device settings section. **Important:** All data rates must be the same for all devices on the DeviceNet network. Choose Apply Node Settings
Not sure	Choose Mini Who... for a list of the active nodes on the network. Choose Network Who... for a list of all devices on the network.

If you change the data rate, you see this screen.


Device Configuration - Data Rate Change
DATA RATE CHANGE WARNING!
This change should only be performed in a Point-to-Point configuration between DeviceNet Manager and a device.
Proceed with Change
Cancel Change

Is the data rate correct?	Then
Yes	Choose Proceed with Change
No	Choose Cancel Change Make the necessary changes and try again.

Using Network Who, Mini Who and Online Compare

What's in This Chapter

Read this chapter to use Network Who and Mini Who.

For information on	See page
Using Network Who	8–1
Using Mini Who	8–3
Using Online Compare	8–4

Using Network Who

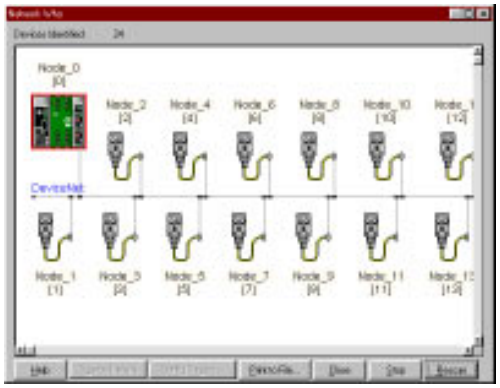
Network Who provides you with a summary of the node address, manufacturer of the device, device type, node name for each device on the network, plus the total number of devices identified.

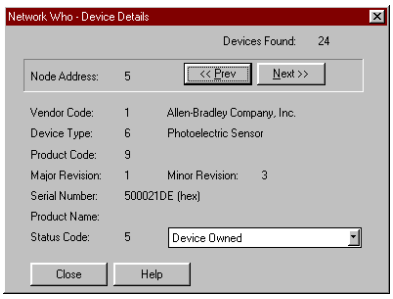
Important: You must be online to select Network Who.

From the *Who* menu, choose **Network Who**.

Who

When complete, the network screen will show the icons of all available nodes on the network.



To	Choose
Find out more information about Network Who	Help
Find out more information about the devices	Device Details You see a screen similar to this one.  To scroll through the Network Who list, choose << Prev to move forward or Next >> to move backward
Configure devices online	Config Device ...
Stop the compilation of devices	Stop
List the devices after the compilation is stopped	Rescan
Print the Network Who results to a file	Print to File... You see a screen similar to this one. Give the file a name select a file path. When the information is correct, choose OK

Important: You must click on a device and select it before you can select **Device Details** or **Config Device**.

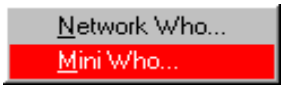
Using Mini Who

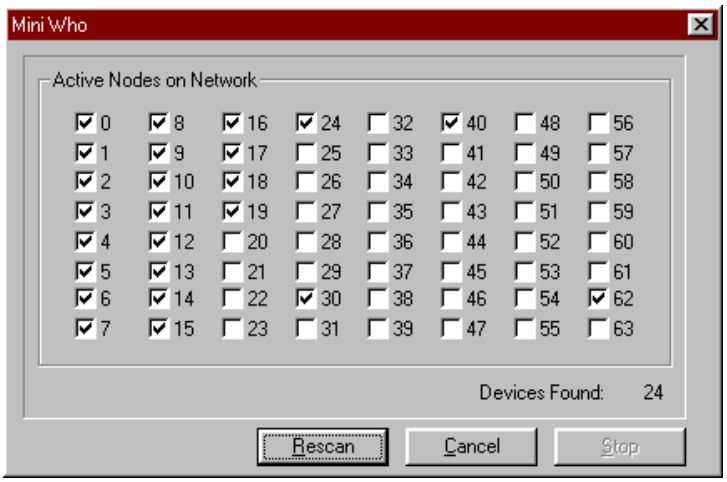
Mini Who shows you devices on the network by node number and the total number of devices found on the network.

Important: You must be online to select Mini Who.

From the *Who* menu, choose **Mini Who**.

Who





To	Choose
Stop the compilation of devices	Stop
List the devices after the compilation is stopped	Rescan
Exit Mini Who and return to the network screen	Cancel

Important: You must stop the compilation of devices before closing out of Mini Who. Otherwise, Mini Who continues to compile devices until the compilation is complete.

Using Online Compare

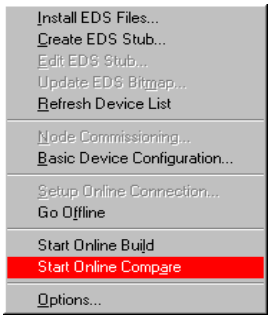
Online Compare displays the devices that are active and on the network and while displaying the devices available on the physical network.

Important: You must be online and in an open project to select Online Compare.

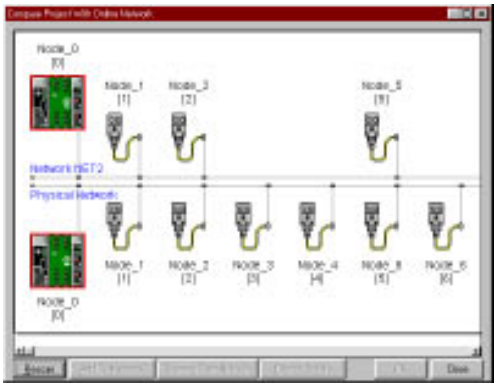
From the *Utilities* menu, choose **Online Compare**.

▶ You can also choose **Online Compare** from the *Topology* menu by clicking the right mouse button

Utilities



You see this screen.

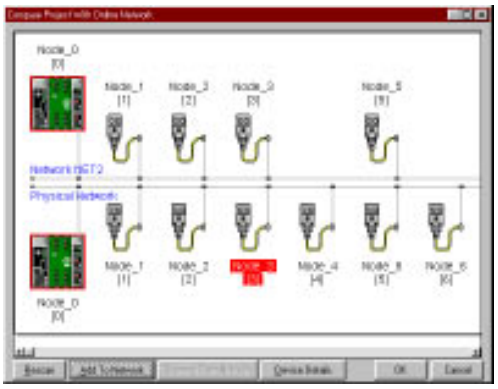


You can add a device to the active network from the physical network by clicking on the device on the physical network and selecting Add To Network.

▶ You can also add a device to the active network by dragging the device from the physical network and dropping it on the active network.

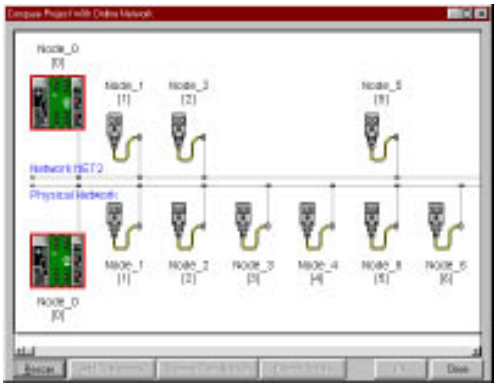
You see this screen:

Notice the device at node 3 is now active on the network

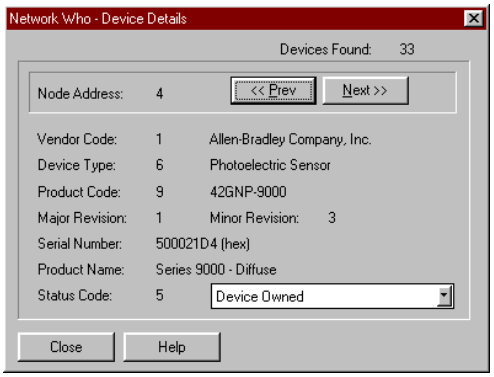


You can remove a device that is on the active network by clicking on it and choosing Remove From Network.

Notice the device at node 3 has been removed from the active network.



You can review device details by clicking on a device and choosing Device Details.



To close the Online Compare without saving changes, choose Cancel.

To close the Online Compare and apply changes to your network, choose OK.

Configuring Devices Online

What's in This Chapter

Read this chapter to configure devices online.

For information on	See page
Understanding configuration methods	9–1
Configuring devices online in basic mode	9–2
Configuring devices online in enhanced mode	9–3
Loading from a device	9–6
Saving to a device	9–7
Performing custom configurations online	9–7

Understanding Configuration Methods

The software chooses the configuration method based on the target devices you want to configure.

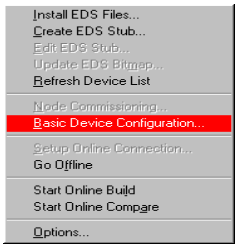
Configuration method	Target device
Basic	Devices that have no manufacturer-supplied EDS — usually requires a paper data sheet supplied by the vendor
Enhanced	Devices with many parameters described by an EDS, which require easy-to-use and logical conventions, with support from the software
Custom	Extensively configurable devices — custom applications embedded in DeviceNetManager software include 1771-SDN scanner, 1747-SDN scanner, and 1794-ADN FLEX I/O adapter — custom configuration tools supplied by device manufacturer compliant with DeviceNetManager software's custom launch specification

Configuring Devices Online in Basic Mode

Follow these steps to configure a device in basic mode.

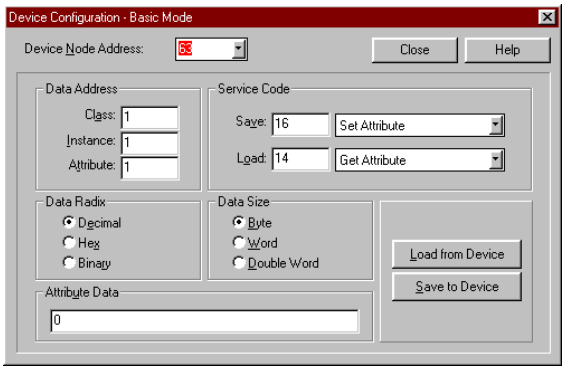
1. Choose a device to configure by clicking once on it.
2. From the *Utilities* menu, choose **Basic Device Configuration**.

Utilities



▶ You can also choose **Configure Device** from the *Device Details* menu by clicking the right mouse button

You see this screen.



3. To find out what parameters are loaded, choose Load from Device
4. Modify parameters according to the documentation supplied by the manufacturer.
5. To save your parameter modifications, choose Save to Device
6. To exit Basic Mode device configuration, choose Close

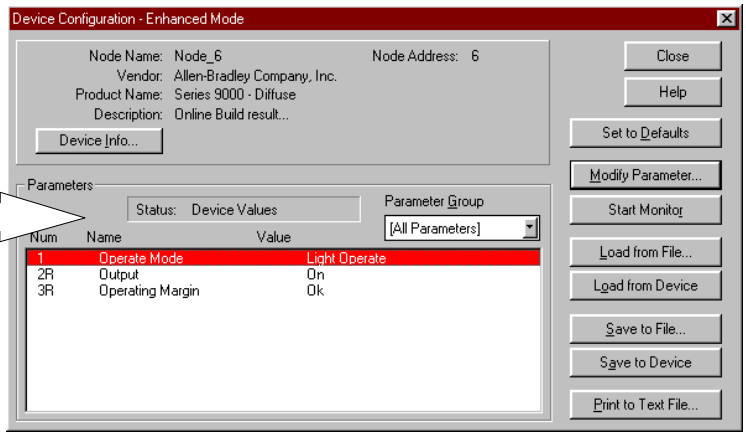
Configuring Devices Online in Enhanced Mode

Follow these steps to configure a device in enhanced mode.

1. Choose the device you want to configure in enhanced mode in the network screen by double-clicking on it.

   You see this screen.

parameter status



Some parameters are read only and are designated by an “R” next to the parameter number reference. Read only parameters are continually monitored.

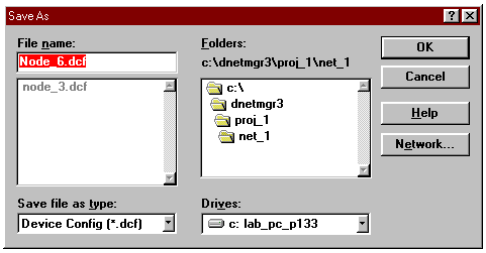
If you have	Status is
Not modified default settings	Default Values
Modified parameters but have not saved them	Modified
Modified and saved parameter settings	Current

2. Choose the parameter group you want to view in the parameter group field.

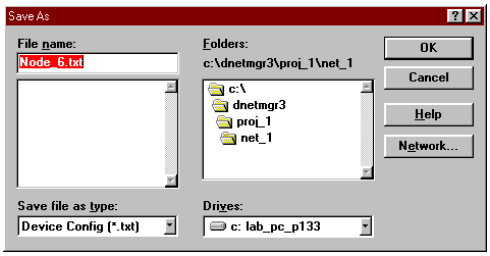
3.

If you want to load parameters	Choose
From a file	Load from File... You see this screen. Choose the drive, file type, and directory to load the file from. Select the file name so that it is highlighted and choose OK **Note:** Product types must be identical in order to load a file from one device to another.
From the selected device	Load from Device
From default settings	Set to Defaults

4.

If you want to	Choose
Save parameters to a file	Save to File... You see this screen.  Select the drive, file type, directory, and file name to which you would like to save and choose OK Repeat step 1 - 4 for each device

5.

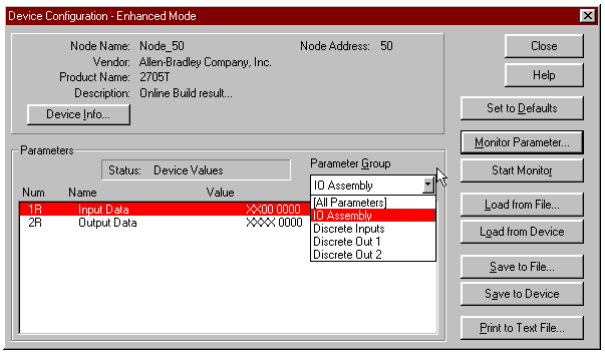
If you want to	Choose
Save parameters to the selected device	Save to Device Repeat step 1 - 4 for each device
Print to a file	Print to Text File... You see this screen.  Select the drive, file type, directory, and file name to which you would like to save and choose OK

6. To exit from the Enhanced Configuration screen, choose Close

Loading from a Device

You can specify whether you want to upload all parameters or just the ones in a particular group.

1. From the Enhanced Configuration screen, choose a parameter group.



If the parameter group you choose is one other than All Parameters and you choose **Load from Device...**, you see this screen.

2.

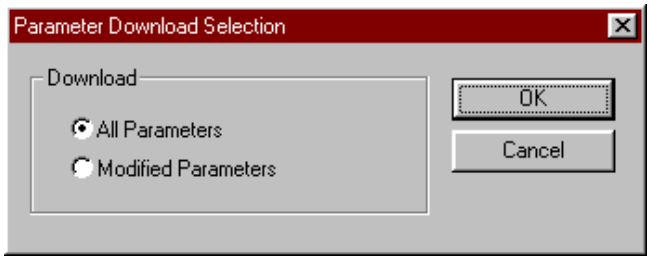
To load	Click on the circle next to
All parameters	All Parameters and choose **OK**
Parameter group	Displayed Parameter Group and choose **OK**

Saving to a Device

When in Enhanced Configuration Mode, you can specify whether you want to save all parameters or just the ones that have been modified.

1. From the Enhanced Configuration screen, choose Save to Device.

   You see this screen.



2.

To save	Click on the circle next to
All parameters	All Parameters and choose OK
Modified parameters	Modified Parameters and choose OK

Performing Custom Configurations Online

To configure a device in custom configuration mode, refer to the appropriate manual for the device. These manuals were included with your software.

Title	Publication Number
DeviceNet Scanner Configuration Manual (1747-SDN)	1747-6.5.2
DeviceNet Scanner Configuration Manual (1771-SDN)	1771-6.5.118
DeviceNet Adapter User Manual	1794-6.5.5

Configuring Devices Offline

What's in This Chapter

Read this chapter to configure devices offline.

For information on	See page
Understanding configuration methods	10–1
Configuring devices offline in enhanced mode	10–2
Performing custom configurations offline	10–4

Understanding Configuration Methods

The software chooses the configuration method based on the target devices you want to configure.

Configuration method	Target device
Enhanced	Devices with many parameters described by an EDS, which require easy-to-use and logical conventions, with support from the software
Custom	Extensively configurable devices—custom application supplied by device manufacturer

Depending upon the device you select, you see one of two types of configuration boxes:

enhanced configurations

internal custom configurations

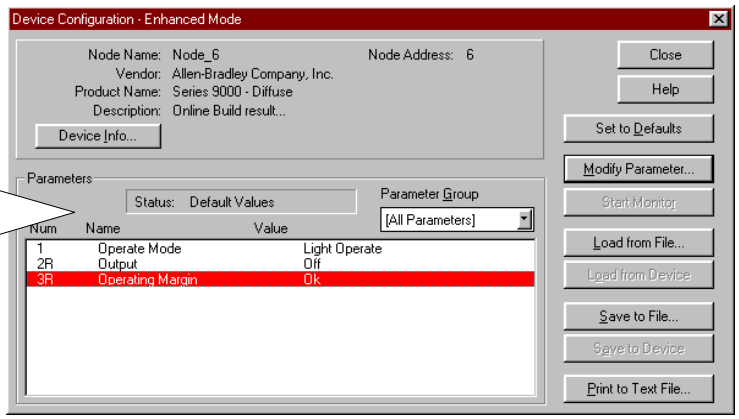
Configuring Devices Offline in Enhanced Mode

Follow these steps to configure a device in Enhanced Mode.

1. Choose the device you wish to configure in the network area by double-clicking on it.

   You see this screen.

parameter status



Some parameters are read only and are designated by an “R” next to the parameter number reference. Read only parameters are continually monitored.

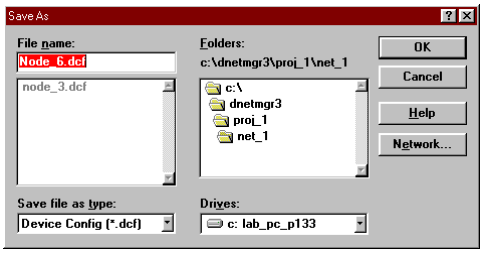
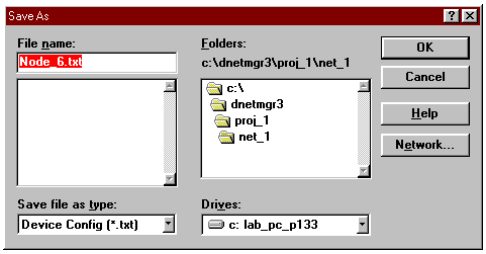
If you have	Status is
Not modified default settings	Defaults
Modified parameters, but have not saved them	Modified
Modified and saved parameter settings	Current

2. Choose the parameter group you want to view in the parameter group field.

3.

If you want to load parameters	Choose
From a file	Load from File...
	You see this screen.
	Choose the drive, file type, and directory to load the file from.
	Select the file name so that it is highlighted and choose OK
From default settings	Set to Defaults

4.

If you want to	Choose
Save parameters to a file	Save to File...
	You see this screen.
	
	Select the drive, file type, directory, and file name to which you would like to save and choose OK
	Repeat step 1 - 4 for each device
Print the parameters to a file	Print to Text File...
	You see this screen.
	
	Select the drive, file type, directory, and file name to which you would like to save and choose OK

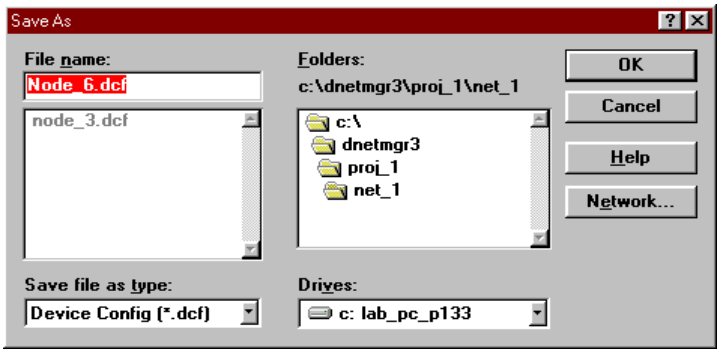
5.

If you selected this type of parameter	Enter
Numeric	Value
Enumerated	Selection
Bit	Settings

6. Choose OK

7. To save those parameters to a file, choose Save to File...

   You see this screen.



8. Choose the file name, file type, directory, and drive to which you want to save the file.

9. Choose OK

Performing Custom Configurations Offline

To configure a device in Custom Configuration Mode, refer to the appropriate manual for the device. These manuals were included with your software.

Title	Publication Number
DeviceNet Scanner Configuration Manual (1747-SDN)	1747-6.5.2
DeviceNet Scanner Configuration Manual (1771-SDN)	1771-6.5.118
DeviceNet Adapter User Manual	1794-6.5.5

Adding EDS Files

What's in This Chapter

Read this chapter to add electronic data sheet (EDS) files to the device library.

For information on	See page
Installing EDS files	11–1
Using the A-B technical support bulletin board	11-4
Creating EDS stub files online	11–7
Editing EDS stub files	11-10
Creating EDS stub files offline	11-11
Updating EDS bitmap files	11-17
Creating an EDS file from Network Who	11–18

Installing EDS Files

Electronic data sheet (EDS) files accompany many vendors' DeviceNet-compatible products. You can load these EDS files on your pc to make it easier to configure your devices.

An EDS file is a specially formatted ASCII file defined by the DeviceNet Specification that allows a device's manufacturer to describe all of the user viewable and adjustable parameters in the device, including help strings.

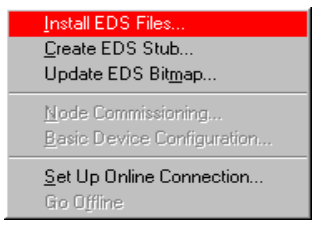
DeviceNetManager software interprets the data in this file to build a user-friendly template on your pc to monitor and configure your device.

The software includes a complete library of Rockwell Automation EDS files available at the time of release. If you have a device that is not in the library, contact the manufacturer of the device to obtain the EDS file, or visit the Open DeviceNet Vendor Association (O.D.V.A.) website (**http://www.odva.org**).

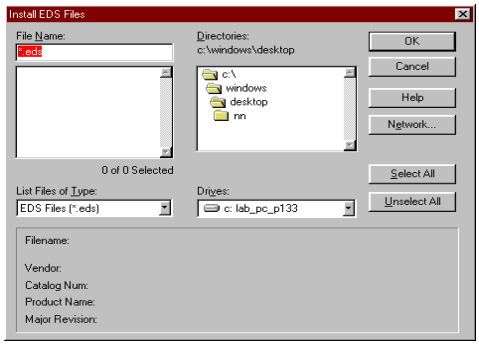
Use the following procedure to install EDS files.

1. From the *Utilities* menu, choose **Install EDS Files**.

Utilities



You see this screen.

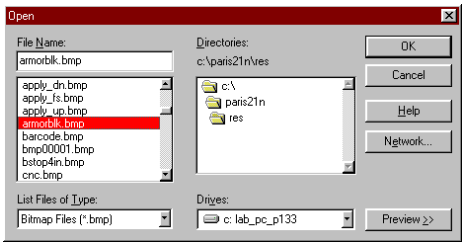


2. Choose the EDS file you want to install and choose **OK**.

You see this screen.

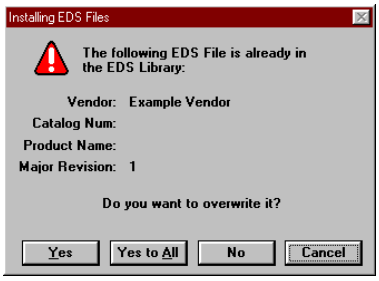
To	Choose
Use the default bitmap and exit the procedure	No
To select a bitmap to represent the new device	Yes

If you choose **Yes**, you see this screen.



3. Choose the bitmap file you want to select and choose **OK**.

If you are installing an EDS file that already exists, you see this screen.



To overwrite the existing device bitmap file with the one you just created, choose **Yes**.

The device you created the EDS list for should now appear in the device list and be available to be added to a network. From the *Utilities* menu, choose **Refresh Device List** and the device will appear in the device list.

Downloading EDS Files from the Internet

Follow these directions to download EDS files from the technical support website. (These examples were created using Netscape Navigator™ 3.0.)

1. Enter the following address:
   (http://supportbbs.ra.rockwell.com)

   You see this screen once you are connected to the Internet site.

2. From the main menu, choose **Existing User Login Using Active HTML**.

You see this screen.

3. Enter the following information:

Prompt	Response
User Name	supportguest
Password	abhelp

4. Choose **OK**.

You see this screen.

5. Choose **Get a File From Us**.

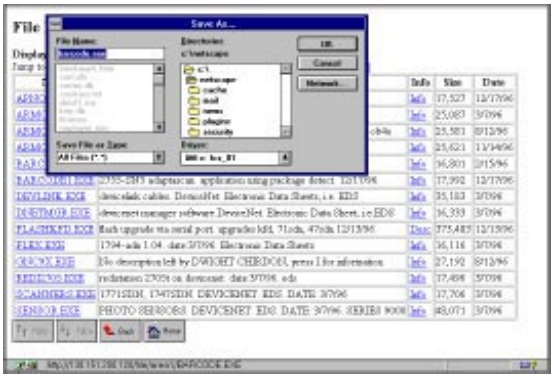
6. From the File Listings, choose DeviceNet by clicking on it once.

7. Then choose your subdirectory by double-clicking on it.

You see this screen.

8. Choose a file to download by double–clicking on the file name.

You see this screen.



9. Enter a file path to save the EDS to and choose OK

   The EDS file is now available in the directory you designated.

10. Repeat steps 7 through 9 to download more DeviceNet EDS files.

Creating EDS Stub Files Online

An EDS stub is a partial EDS file containing the minimum information necessary to add a device to the library of available devices and configure an I/O connection from a scanner (master).

An EDS file is an ASCII file in the prescribed format described in the DeviceNet Specification. This file type contains all information necessary to add and configure the device.

Important: An EDS stub file does not provide enough information to configure any adjustable parameters. Contact the device's manufacturer to obtain the full EDS file.

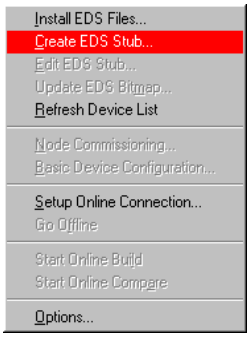
Follow these directions to create an EDS stub file online.

Important: You must be online before generating an EDS file from a device (see chapter 5).

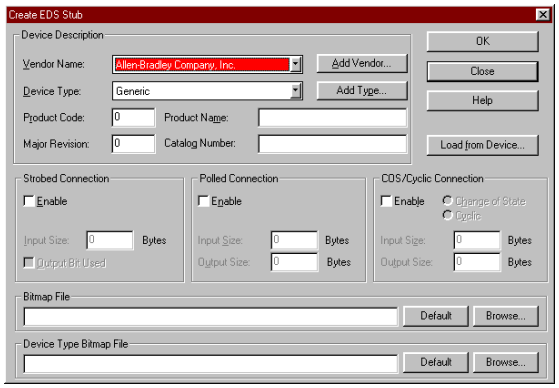
ATTENTION: Do not generate an EDS stub file from a device unless the device's manufacturer has no EDS file available. Creating or editing an EDS stub will destroy current EDS information.

1. From the *Utilities* menu, choose **Create EDS Stub**.

Utilities

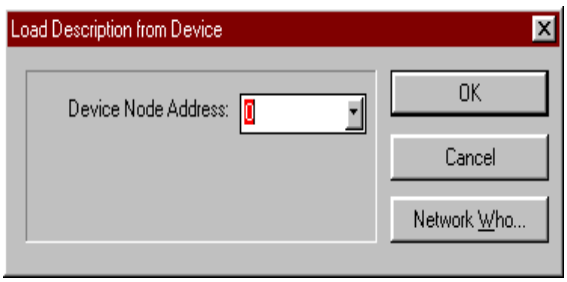


You see this screen.



2. Choose Load from Device

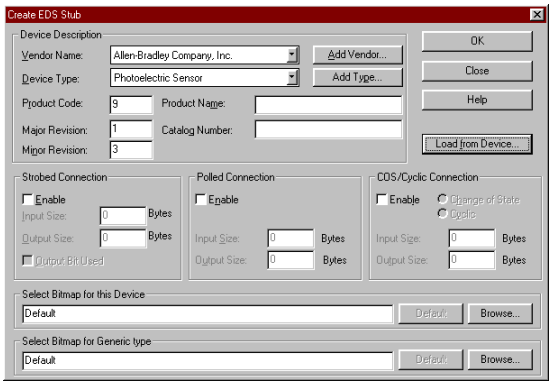
   You see this screen.



3. Enter the node address of the device from which you wish to upload. If you are unsure of the node address, choose Network Who...

4. Choose OK

   Once the EDS files are uploaded, the Create EDS File screen is updated with the selected device's information.



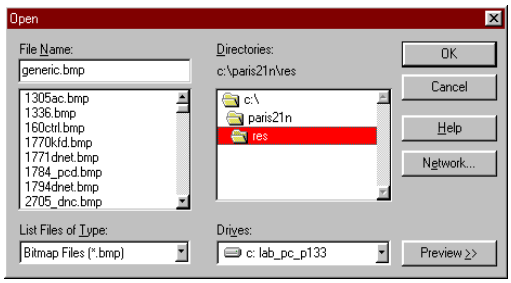
We highly recommend you enter the catalog number, I/O type, and I/O setup. These can be obtained from the device's documentation.

5. Choose a bitmap to represent the device you just created the EDS stub for.

   A. To use the default bitmap, choose **Default**.

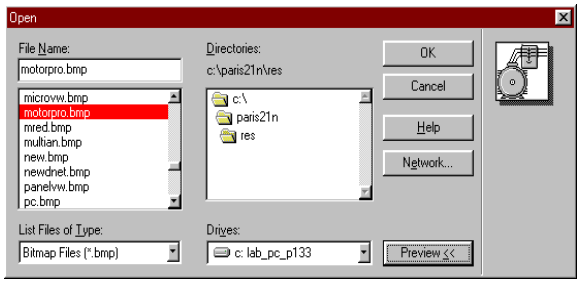
   B. To select a bitmap, choose **Browse**.

You see this screen:



C. Select the proper file path to the bitmap by choosing the bitmap you want to use to represent the new device type.

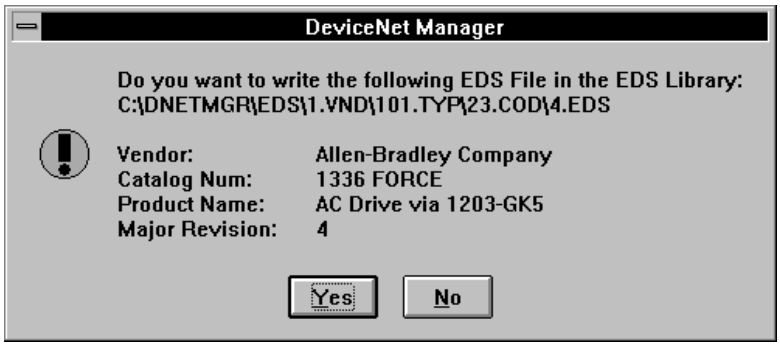
If you want to view the bitmap before you assign it to the device type choose **Preview**. The bitmap image will appear as shown below.



When the file path is correct, choose **OK.**

To save the EDS file you've just created, choose OK

You see this message.



If the information is correct choose Yes.

You return to the project screen. Notice that the device you just created the EDS stub for now appears in the Device List.

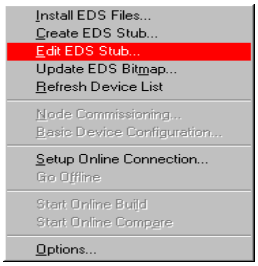
Editing EDS Stubs

Use the following procedure to edit EDS stub files.

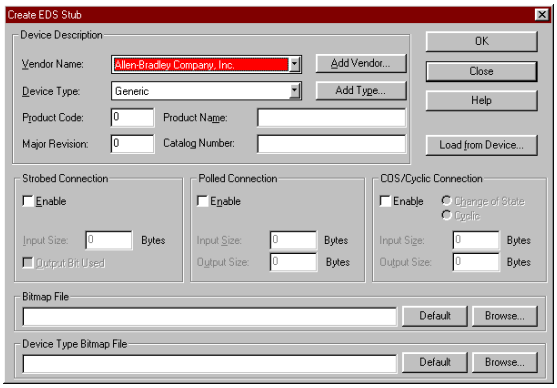
ATTENTION: Creating or editing an EDS stub will destroy current EDS information.

1. From the *Utilities* menu, choose **Edit EDS Stub**.

Utilities



You see this screen.



2. Use the procedures documented in Creating EDS Stub Files to edit your EDS stub files.

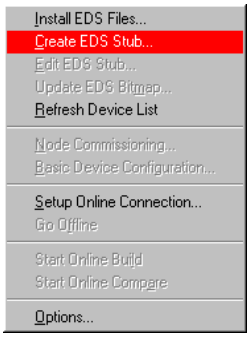
Creating EDS Stub Files Offline

Follow these directions to create an EDS stub file offline.

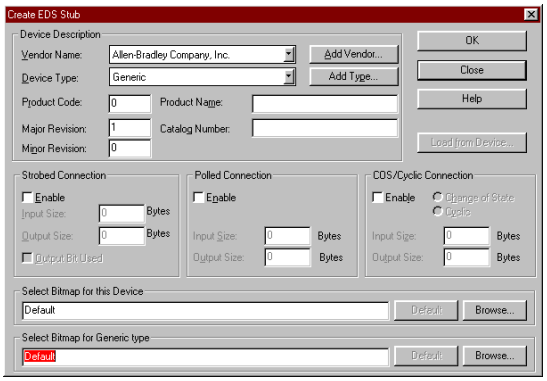
ATTENTION: Do not generate an EDS stub file from a device unless the device's manufacturer has no EDS file available. Creating or editing an EDS stub will destroy current EDS information.

1. From the *Utilities* menu, choose **Create EDS Stub**.

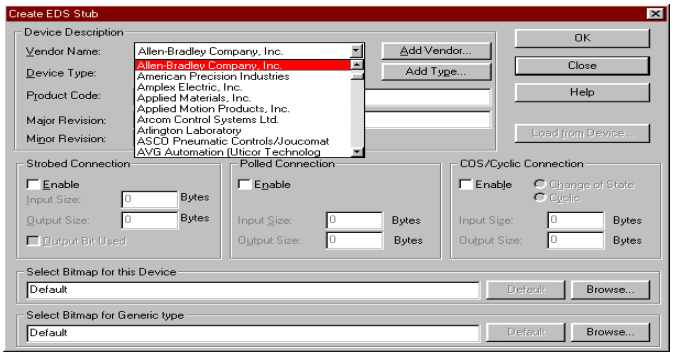
Utilities



You see this screen.

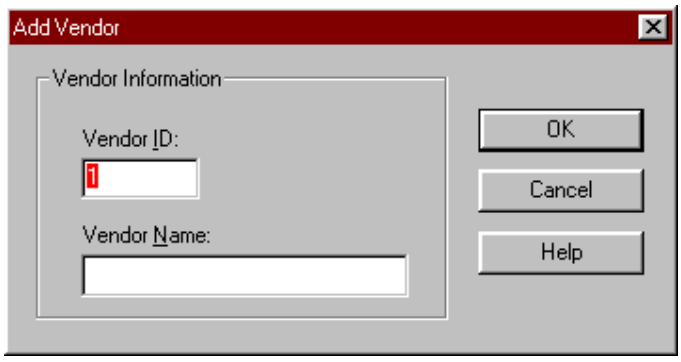


2. Scroll down the vendor name list and click once on the desired vendor.



To add a vendor not listed in the vendor list, choose Add Vendor....

You see this screen.

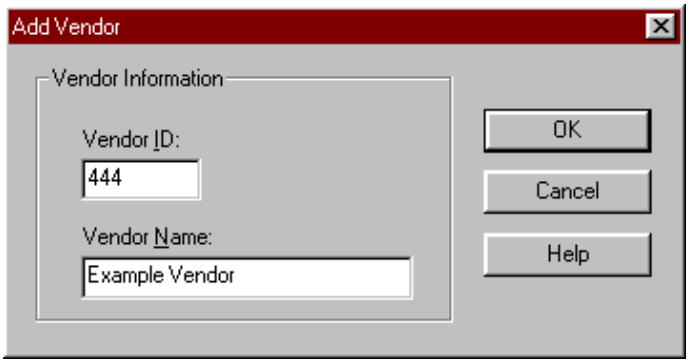


The Open DeviceNet Vendor Association (O.D.V.A.) maintains the official list of Vendor IDs. While the DeviceNetManager software includes the latest version of vendor IDs at the time of release, you may visit the O.D.V.A. website (**http://www.odva.org**) for the current listing.

If the device's vendor is not in the list, contact the manufacturer to obtain their vendor ID and official vendor name.

Important: Do not make up a Vendor ID! Do not proceed unless you have the proper Vendor ID.

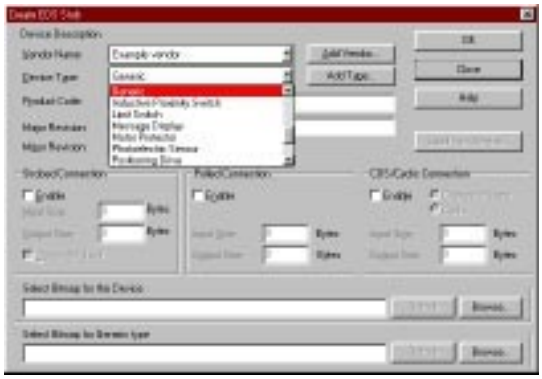
A. Enter the vendor ID number and vendor name in their respective fields.



B. Choose OK

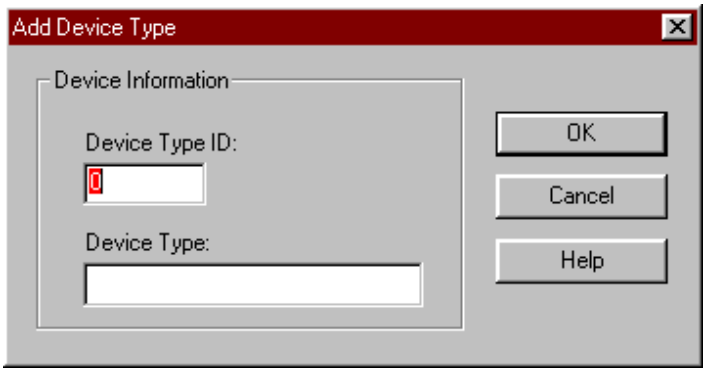
You return to the Create EDS Stub screen.

3. Scroll down the device type list and click on the desired type.



A. If the device type you want is not in the list, choose **Add Type...**

You see this screen.

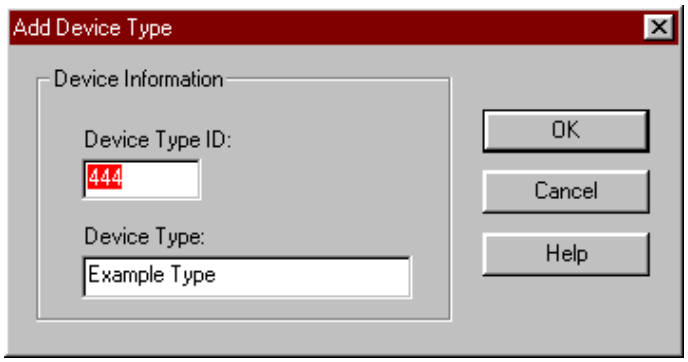


The Open DeviceNet Vendor Association (O.D.V.A.) maintains the official list of device types. While the DeviceNetManager software includes the latest version of device types at the time of release, you may visit the O.D.V.A. website (**http://www.odva.org**) for the current listing.

If the device's type is not in the list, contact the manufacturer to obtain the correct device type.

Important: Do not make up a device type! Do not proceed unless you have the proper device type.

B. Enter the device type ID number and device type in their respective fields.



C. Choose OK

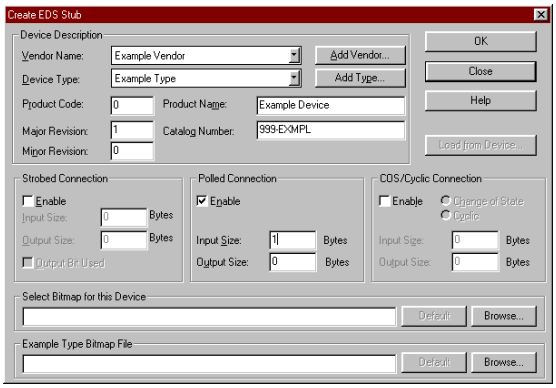
You see this screen.

D. To add the device type, choose OK

You return to the Create EDS Stub screen.

4. Enter the remaining information in their respective fields.

   Note: See the device's user manual for this information.



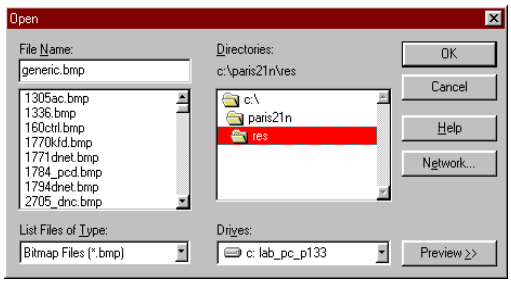
5. Once you've entered the information, select a bitmap graphic for the device type you just created.

   A. From the *Set Bitmap for Generic Type* section, choose **Browse.**

▶ If you want to use a different bitmap graphic to represent a different device under a similar device type, choose **Browse** in the *Set Bitmap for this Device* section.

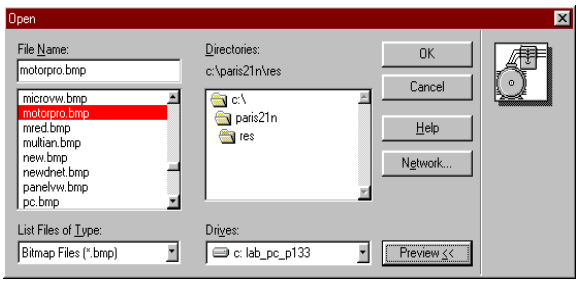
▶ You can also choose **Default** in either section to select a preset Generic bitmap graphic.

You see this screen:



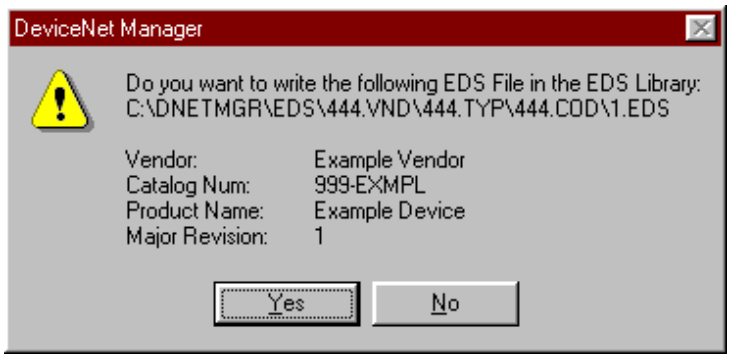
   B. To choose the bitmap you want to use to represent the new device type, select the proper file path to the bitmap.

If you want to view the bitmap before you assign it to the device type choose **Preview**. The bitmap image will appear as shown below.



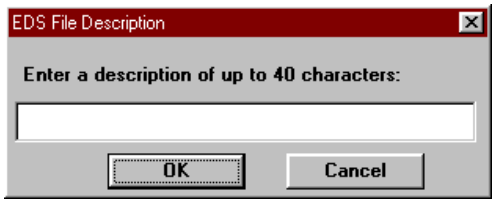
6. Once you've entered the information, choose OK

You see this screen.



7. To save the EDS stub file, choose Yes

You see this screen.



8. Enter a EDS file description and choose OK

The device has now been added to the device library.

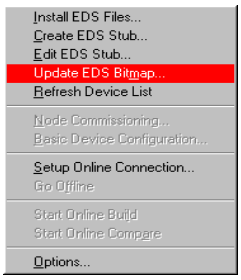
You return to the project screen. The device you created the EDS for now appears in the device list and is available to be added to your network.

Updating EDS Bitmaps

Use the following procedure to update EDS bitmap files.

1. Choose a device to update a bitmap by clicking on it.
2. From the *Utilities* menu, choose **Update EDS Bitmap**

Utilities

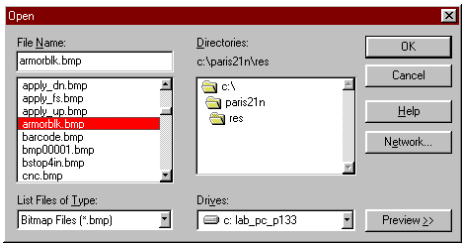


Important: If you are updating EDS bitmaps outside a project without a device selected, you will have to select an EDS file before you can designate which bitmap to update.

You see this screen.

To	Choose
Use the default bitmap and exit the procedure	No
To select a bitmap to represent the new device	Yes

If you choose **Yes**, you see this screen.



3. Choose the bitmap file you want to select and choose **OK**.

Creating an EDS File from Network Who

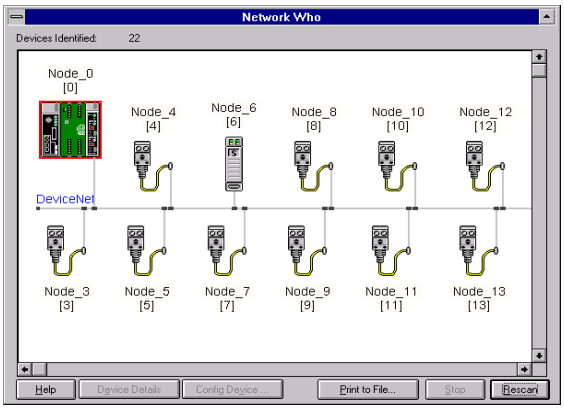
Follow these directions to create an EDS file from Network Who.

Important: You must be online before creating an EDS file (see chapter 5).

1. From the *Who* menu, choose **Network Who**.

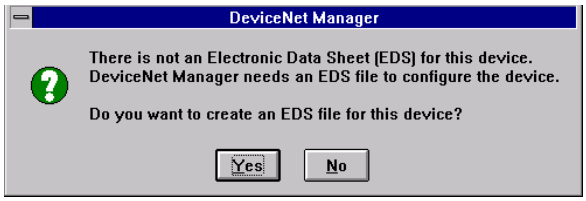
Who

You see this screen.



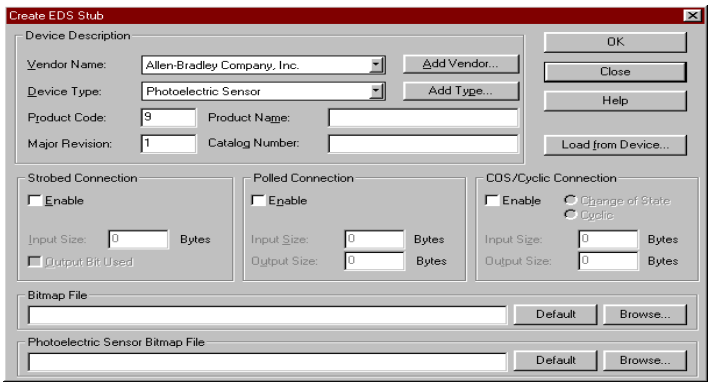
2. Double click on the device icon that you wish to create an EDS file.

You see this screen.

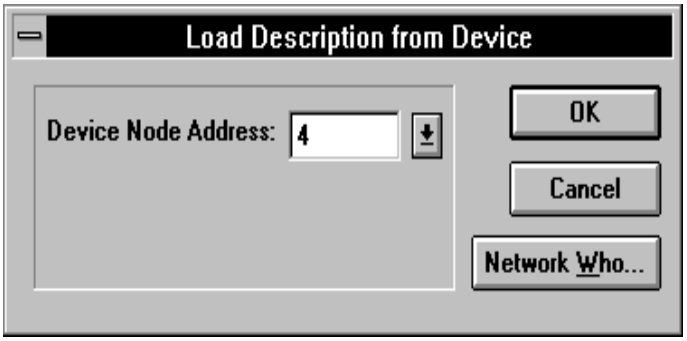

DeviceNet Manager
There is not an Electronic Data Sheet (EDS) for this device.
DeviceNet Manager needs an EDS file to configure the device.
Do you want to create an EDS file for this device?
Yes
No

3. To create an EDS file, choose

You see this screen.

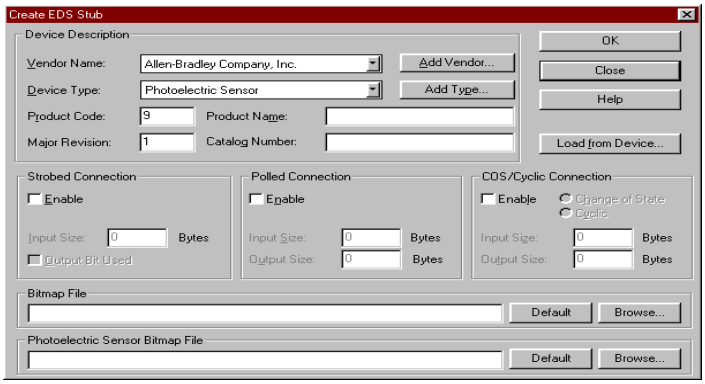


You see this screen.



4. Choose OK

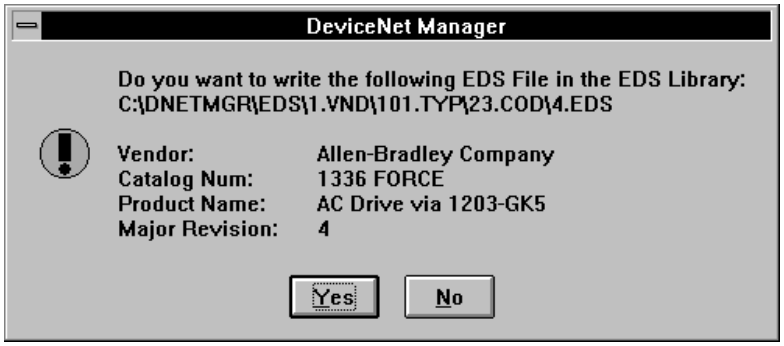
Once the EDS files are uploaded, the Create EDS Stub screen is updated with the selected device's information.



We highly recommend you enter the catalog number, I/O type, and I/O setup. These can be obtained from the device's documentation.

5. To save the EDS file you've just created, choose **OK**.

You see this message.



6. To save the EDS file, choose

You return to this screen. Notice the device you created the EDS file for now appears in the device list and is available to be added to the network.

Launching External Configuration Tools

What's in This Chapter

Read this chapter to launch an external configuration tool from DeviceNetManager software while online or offline.

For information on	See page
Launching custom configuration tools	12–1
Starting an external configuration tool	12–1

Launching Custom Configuration Tools

Some devices are too complex to use an EDS file for configuration. Examples of devices that use custom configuration tools are the FLEX I/O module, the 1771-SDN scanner, and the 1747-SDN scanner. However, these custom tools are built into DeviceNetManager software and do not require a special EDS file.

Now DeviceNetManager software, version 3.001 can open an external configuration tool from a project or from Network Who. The linkage *must* be specified in the EDS file supplied by the device's manufacturer to allow launching by DeviceNetManager software.

In addition, when the custom tool is installed, it will register itself with DeviceNetManager software. During runtime when you save the device's configuration, the tool will put information in a shared information file before returning you directly to DeviceNetManager software.

Information in the shared information file will be accessed later when you use the 1771-SDN scan list editor or 1747-SDN scan list editor to configure your I/O connections.

Starting an External Configuration Tool

To configure a device that uses an external software application, double-click on the device, just like you would to configure any other device.

The custom configuration tool launches automatically and you can begin working in the application.

If you see this screen, DeviceNetManager software does not have enough information necessary to start the custom configuration tool.

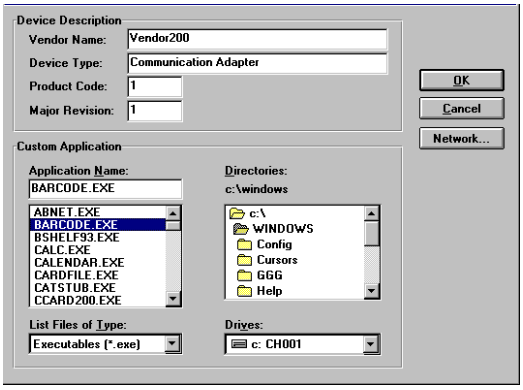
DeviceNet Manager
This device's EDS File indicates that the following custom configuration application is to be used:
BARCODE.EXE
This application cannot be located on your server.
You must locate the application named above using the Tool Browser in order to launch your Custom Configuration tool
OK
Cancel

This problem can occur if the custom configuration tool was installed prior to DeviceNetManager software. If the tool has not been installed, choose **Cancel**

Exit DeviceNetManager software to install the configuration tool.

If you know that the custom configuration tool has already been installed on your computer, you may specify the location of the application by choosing **OK**

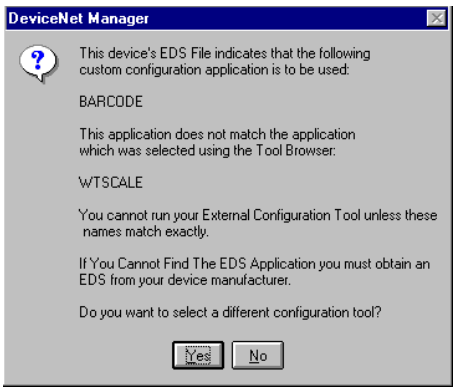
You see this screen.



Find the software application in the list of files on your computer and choose **OK**

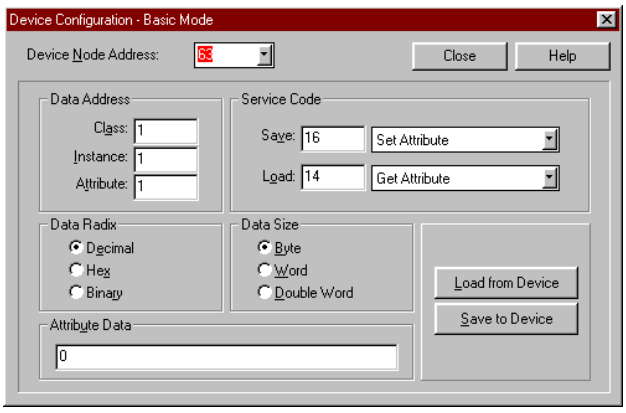
The software application will start and be linked with the EDS file by DeviceNetManager software. The next time you wish to configure this device, the custom tool will launch automatically.

If you then see this screen, the application you selected does not match the file name specified by the EDS file for this device. To select the proper application, choose Yes.


DeviceNet Manager
This device's EDS File indicates that the following custom configuration application is to be used:
BARCODE
This application does not match the application which was selected using the Tool Browser:
WTSCALE
You cannot run your External Configuration Tool unless these names match exactly.
If You Cannot Find The EDS Application you must obtain an EDS from your device manufacturer.
Do you want to select a different configuration tool?
Yes
No

If you cannot find the correct application, contact the device's manufacturer.

If you see the basic device configuration screen below, the EDS file does not contain the data necessary to launch a custom configuration tool or there is no EDS file. Contact the device's manufacturer to get the EDS file.



Using the Flash NVS Update Software

What's in This Appendix

Read this chapter to update your scanner(s) and/or 1770-KFD RS-232 interface module using the Flash NVS update software.

For information on	See page
About the Flash NVS update software	A–1
Running the Flash NVS update software	A–2
Troubleshooting	A–7

About the Flash NVS Update Software

The Flash NVS update software updates the following devices to the proper revision numbers to operate correctly with DeviceNetManager software:

- 1771-SDN scanner to revision number 3.004 (eg. 3.4)
- 1747-SDN scanner to revision number 3.001 (eg. 3.1)
- 1770-KFD RS-232 interface module to revision number 1.004 (eg. 1.4)

The 1770-KFD RS-232 interface module takes approximately one minute to update. Use the following times as a guideline when planning updates to your scanner(s). *These times are per scanner.*

- 9600 or 19200 baud – approximately 30 to 45 minutes
- 38400 or 57600 baud – approximately 15 to 20 minutes

If you are using the 1784-PCD card, the updates take about 5 minutes.

If you are running Windows NT or Windows 95, start the Flash NVS update software at a higher baud rate, such as 38400 or 57600.

If you are running Windows 3.1 or later, start the Flash NVS update software at a higher baud rate, but note that you may encounter problems due to existing documented problems in the Microsoft Windows serial port drivers at baud rates over 9600. If you encounter problems or failures, start the update again at 19200 or 9600 baud.

If the scanner you are updating is the only master on the network, proceed with the NVS update. However, make sure there is no other traffic on the network such as a Network Who from another pc.

If there are multiple scanners acting as masters on the network, do not perform the NVS update across the network. The NVS update must be performed in a point-to-point connection with each scanner.

ATTENTION: Save your scanners' configuration table and scanlist to a disk or file before performing the update.

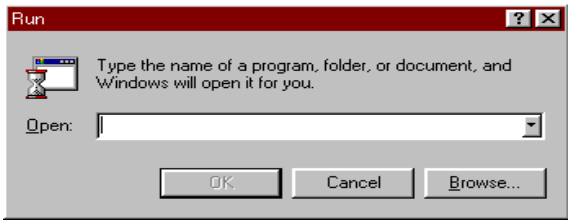
Running the Flash NVS Update Software

Follow these directions to run the Flash NVS update software. Remember to write down the node addresses of the devices you will update after performing the Network Who described in the Read This First document, publication 1787-6.5.3-RN1, included with the software.

1. Save your scanners' configuration table and scanlist to a disk or file.
2. Close all running applications on your pc.
3. Insert the Flash NVS update software disk into the 3.5" disk drive of your pc.
4. From the *File* menu, choose **Run**.

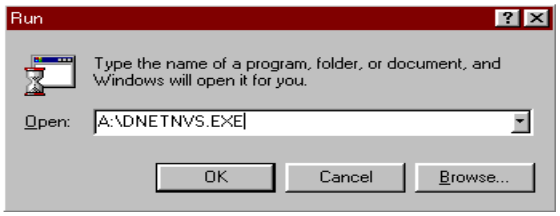
File

You see this screen.

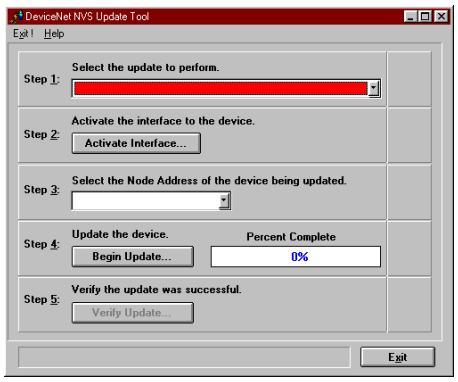


5. Type `a:dnetnvs.exe` at the Command Line.

If you inserted the software disk into another disk drive, use the appropriate drive letter instead of a :



You see this screen which shows steps 1 through 5.

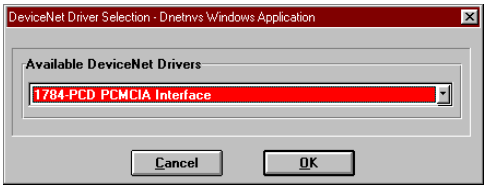

DeviceNet NVS Update Tool
Exit! Help
Step 1: Select the update to perform.
Step 2: Activate the interface to the device.
Activate Interface...
Step 3: Select the Node Address of the device being updated.
Step 4: Update the device.
Begin Update...
Percent Complete
0%
Step 5: Verify the update was successful.
Verify Update...
Exit

Important: You must follow steps 1 through 5 in order.

6. In the step 1 field, click on the arrow and highlight the device you wish to update. A green check mark appears in the right column when your choice is processed.

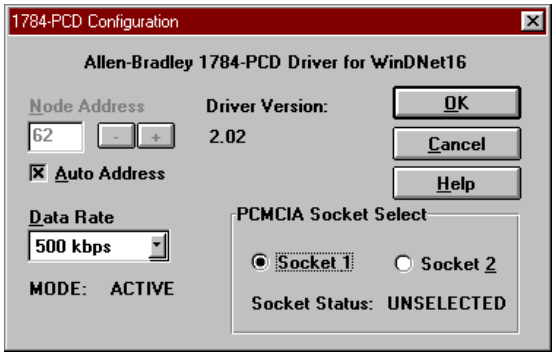
7. In the step 2 field, choose Activate Interface...

You see this screen.



Select your driver and choose OK.

You see this screen.



8. Verify that all of the information is correct and choose OK.

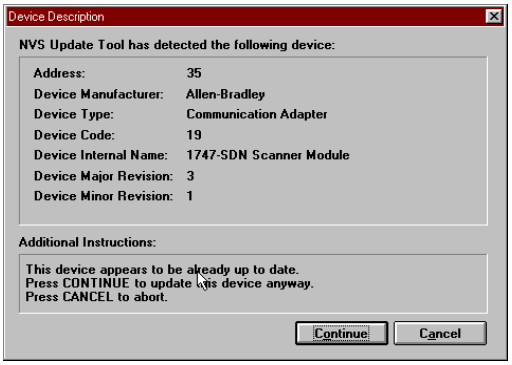
If you are updating the 1770-KFD RS-232 interface module, the step 3 field is automatically filled in for you.

If you are updating a scanner, click on the arrow and choose the node address of the scanner.

If you do not know the node addresses of your devices, see the Read This First document, publication 1787-6.5.3-RN1, included with the software.

9. In the step 4 field, choose Begin Update...

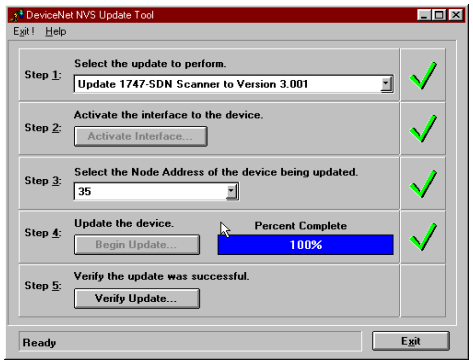
You see this screen.


Device Description
NVS Update Tool has detected the following device:
Address: 35
Device Manufacturer: Allen-Bradley
Device Type: Communication Adapter
Device Code: 19
Device Internal Name: 1747-SDN Scanner Module
Device Major Revision: 3
Device Minor Revision: 1
Additional Instructions:
This device appears to be already up to date.
Press CONTINUE to update this device anyway.
Press CANCEL to abort.
Continue
Cancel

10. To update the device, choose Continue

Important: Do not disconnect anytime during the process. If the update is interrupted, start over. If the update fails, start over at a lower baud rate.

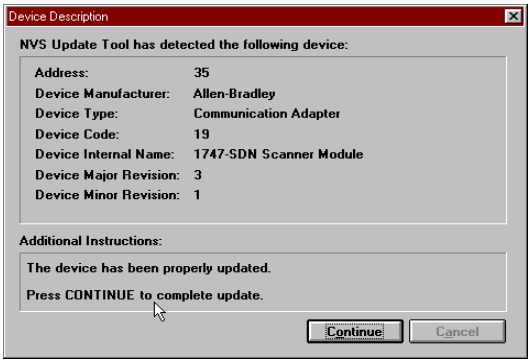
Once the update is complete, you will see the green checkmark in the step 4 field.



11. To verify the update, choose Verify Update...

You see this screen.

Notice the update has been completed.



12. Choose Continue

    You return to this screen.

13. To update more devices, repeat steps 5 to 11. To exit the update software, choose Exit.

14. Return to DeviceNetManager software, version 1.1, and enter the scanner configuration screen by double-clicking on the scanner in the project screen.

15. Choose Load From **File**.

16. Enter the file name of the configuration table and scanlist and choose OK

    You've loaded the scanner configuration table and scanlist back into the scanner.

17. Repeat steps 1 through 15 for each scanner and/or 1770-KFD RS-232 interface module.

18. Once your devices are updated, exit the Flash NVS update software and install DeviceNetManager software, version 3.001. See the DeviceNetManager Software User Manual, publication 1787-6.5.3, for more information.

Troubleshooting

If you installed DeviceNetManager software, version 3.001, before updating all of your scanners or RS-232 interface modules, open up your old version of DeviceNetManager software in the Windows file manager (dnetmgr.exe) or (dnetmgr2.exe).

Determine the node and revision number(s) for each device using the instructions in the Read This First document, publication 1787-6.5.3-RN1, included with DeviceNetManager software, version 3.001.

After determining your device's node and revision number(s), go to page A–2 and follow the directions to run the Flash NVS update software.

Using the DeviceNetManager Software Shortcut Keys

What's in This Appendix

Use this appendix as a reference guide to the available shortcut keys that can be employed throughout the application.

DeviceNetManager Software Function Shortcut Keys

The following list contains the keyboard shortcut keys that allow you to perform DeviceNetManager Software functions.

Shortcut Key	Function
Control + C **Control + Insert**	Copy
Control + F	Device information
Control + H	Setup online connection
Control + J	Edit project
Control + K	Edit network
Control + N	Create new project
Control + O	Open project
Control + P	Print topology
Control + S	Save file
Control + V **Shift + Insert**	Paste
Control + X **Shift + VK + Delete**	Cut
F1	Help
Shift + F1	Context help
F3	View topology in master centric perspective
F4	View topology in slave centric perspective
F5	View context menu (right mouse button features)

DeviceNetManager Software Topology Shortcut Keys

The following list contains the keyboard shortcut keys that allow you to perform DeviceNetManager Software topology functions.

Shortcut Key	Topology Function
Control + Left Arrow	Scroll left
Control + Right Arrow	Scroll right
Control + Up Arrow	Scroll up
Control + Down Arrow	Scroll down
Left Arrow	Select previous device
Right Arrow	Select next device
Enter	Configure selected device
Tab	Selects next section between device list, project view, and topology view

Allen-Bradley
Publication Problem Report

If you find a problem with our documentation, please complete and return this form.

Pub. Name DeviceNetManager Software User Manual

Cat. No. 1787-MGR Pub. No. 1787-6.5.3 Pub. Date May 1997 Part No. 955128-27

Check Problem(s) Type:	Describe Problem(s):	Internal Use Only
☐ Technical Accuracy	☐ text ☐ illustration	
☐ Completeness What information is missing?	☐ procedure/step ☐ illustration ☐ definition ☐ example ☐ guideline ☐ feature ☐ explanation ☐ other	☐ info in manual (accessibility) ☐ info not in manual
☐ Clarity What is unclear?		
☐ Sequence What is not in the right order?		
☐ Other Comments Use back for more comments.		

Your Name _____ Location/Phone _____

Return to: Technical Communication, Allen-Bradley Co., 1 Allen-Bradley Drive, Mayfield Hts., OH 44124

Phone: (216)646-3166
FAX: (216)646-4320

Publication ICCG-5.21-August 1995 PN 955107-82

A

adding, devices to networks, 5-1

adding networks, 4-4
  shortcut, 4-4

audience (of this manual), P-2

B

basic mode, configuration, 1-3
  online, 9-1
    how to, 9-2

bitmaps, updating, 11-17

building, networks online, 5-11

C

commissioning, devices, 7-1

communication, DeviceNet, 3-1

compare, online, using, 8-4

compatibility, DeviceNet Specification, 1-1

configuration
  basic mode, 1-3
    online, 9-1
      how to, 9-2
  categories, 1-2
  custom, 1-4
    offline, 10-1, 10-4
    online, 9-1, 9-7
  DeviceNet communication services, 1-3
  DeviceNet interface adapter, RS-232 module, 1-3
  devices, offline, 10-1
  EDS files, 1-3
  enhanced mode, 1-3
    loading parameters from a device, 9-6
    offline, 10-1, 10-2
    online, 9-1
      how to, 9-3
    saving parameters to a device, 9-7
  mechanical switches, 1-3
  methods, 1-3, 9-1
    offline, 10-1
  node commissioning, 1-3
  online or offline, 5-9
    possibilities, 1-4
  parameter object, 1-3
  user interface, 1-3

configuration tools
  launching custom, 12-1
  starting external , 12-1

connections
  network, 3-2
  online, setting up, 3-2
  point-to-point, 3-2
  RS-232 module, 3-4

contents of your order, P-1

conventions, P-2

copying
  devices
    different project/network, 5-5
    same project/network, 5-7
  network files, 4-12

creating
  EDS files
    from Network Who, 11-18
    offline, 11-11
    online, 11-7
  new projects, 4-2

custom, configuration, 1-4
  possibilities, 1-4

custom configuration tools, launching, 12-1

custom mode, configuration
  offline, 10-4
  online, 9-1, 9-7

D

deleting, devices, 5-8

DeviceNet
  communication, 3-1
  communication services, configuration, 1-3
  interface adapter, RS-232 module, configuration, 1-3
  network diagram, 1-1
  Specification compatibility, 1-1

DeviceNetManager software
  compatibility, 1-1, 2-1
  installation, 2-1
  overview, 1-1
  project structure, 1-1
  requirements, 2-1

devices
  adding to networks, 5-1

commissioning, 7–1
configuration, 1–3
custom, offline, 10–4
enhanced mode, offline, 10–2
offline, 10–1
copying
different project/network, 5–5
same project/network, 5–7
deleting, 5–8
editing information, 5–3
moving, 5–4
updating bitmaps, 11–17

diagrams
DeviceNet communication, 3–1
DeviceNet network, 1–1
example project, 1–2
projects, optional structure, 1–2

downloading, EDS files, 11–4

E

editing
device information, 5–3
network information, 4–8
project information, 4–14
stub files, 11–10

EDS files
configuration, 1–3
possibilities, 1–4
creating
offline, 11–11
online, 11–7
downloading , 11–4
installing, 11–1

electronic data sheet (EDS) files. *See* EDS files

enhanced mode
configuration, 1–3
offline, 10–1, 10–2
online, 9–1
how to, 9–3
loading parameters from a device, 9–6
saving parameters to a device, 9–7

exiting
DeviceNetManager software, 2–5
installation process, 2–5

exporting, a network to a file, 4–15

external configuration tools, starting, 12–1

F

file extensions, 1–4

Flash NVS update software
about, A–1
running, A–2
troubleshooting, A–7

H

help, online, P–2

I

installation
DeviceNetManager software, 2–1
EDS files, 11–1
exiting, 2–5

internal value, using, 6–3

L

launching, custom configuration tools, 12–1

M

mechanical switches
configuration, 1–3
online or offline configuration, 1–4

menus
edit, 4–1
project, 4–1
window, 4–1

Mini Who, using, 8–3

modem support, going online with, 5–10

monitoring
all parameters, 6–1
individual parameters, 6–2

cutting and pasting, network files, 4–10

moving, devices, 5–4

N

network
adding a, 4–4
adding devices, 5–1
building a, 5–11
connection, 3–2
diagram, 1–1
editing information, 4–8
files
copying, 4–12
cutting and pasting, 4–10
power, 3–4

Network Who
creating an EDS file, 11–18

using, 8–1
node, commissioning, 7–1
configuration, 1–3

O

offline
configuration, 1–4, 10–1
custom, 10–4
enhanced mode, 10–2
creating, EDS files, 11–11
online
building a network, 5–11
connection, setting up, 3–2
creating, EDS files, 11–7
going, 5–9
help, using, P–2
modem support, 5–10
operation, 5–11
online
configuration, 1–4
connection, setting up, 5–9
online compare, using, 8–4
opening, existing projects, 4–6
organization, DeviceNetManager software, 1–1

P

parameter objects
configuration, 1–3
online or offline configuration, 1–4
parameters
monitoring all, 6–1
monitoring individual, 6–2
point-to-point, connection, 3–2
power
9V dc power-supply adapter, 3–2
RS-232 module, 3–2
from 9V dc power-supply adapter, 3–5
from network, 3–4
power-supply adapter, 9V dc, 3–2
power, 3–5
printing
network topology, 4–17
project to file, 4–16
projects
benefits of, 4–1
creating, 1–2
creating new, 4–2
diagram, 1–2
optional structure, 1–2
editing information, 4–14
menu, 4–1
opening existing, 4–6
saving a, 4–7
structure, DeviceNetManager software, 1–1
publication numbers
DeviceNet Adapter User Manual, (1794-ADN), 1–4
DeviceNet Scanner Module Configuration Manual
(1747-SDN), 1–4
(1771-SDN), 1–4
publications, related, P–3
purpose (of this manual), P–1

R

related publications, P–3
requirements, DeviceNetManager software, 2–1
RS-232 module
connection, 3–4
indicators, 5–11
power, 3–2
from 9V dc power-supply adapter, 3–5
from network, 3–4

S

saving, projects, 4–7
screens, P–4
confirmation boxes, P–7
dialog boxes, P–7
menu and tool bars, P–4
status and info bars, P–4
setting up your online connection, 5–9
shortcuts
adding networks, 4–4
basic device configuration, online, 9–2
copying devices, 5–5, 5–7
deleting devices, 5–8
deleting networks, 4–10
editing device information, 5–3
editing network information, 4–8
function keys, B–1
online compare, 8–4

right mouse button menus, project details, device details, topology, P–6
starting online build, 5–11
topology keys, B–1
starting, external configuration tools, 12–1
stub files
editing, 11–10
EDS. *See* EDS files
support services, P–8

T

terminology, P–3
Topology Perspective, Master and Slave Centric, P–5
troubleshooting, Flash NVS update software, A–7

U

user interface, configuration, 1–3

W

Who
Mini, using, 8–3
Network, using, 8–1
Windows tools, P–2

Rockwell Automation

Allen-Bradley

Allen-Bradley, a Rockwell Automation Business, has been helping its customers improve productivity and quality for more than 90 years. We design, manufacture and support a broad range of automation products worldwide. They include logic processors, power and motion control devices, operator interfaces, sensors and a variety of software. Rockwell is one of the world's leading technology companies.

Worldwide representation.

Argentina • Australia • Austria • Bahrain • Belgium • Brazil • Bulgaria • Canada • Chile • China, PRC • Colombia • Costa Rica • Croatia • Cyprus • Czech Republic • Denmark • Ecuador • Egypt • El Salvador • Finland • France • Germany • Greece • Guatemala • Honduras • Hong Kong • Hungary • Iceland • India • Indonesia • Ireland • Israel • Italy • Jamaica • Japan • Jordan • Korea • Kuwait • Lebanon • Malaysia • Mexico • Netherlands • New Zealand • Norway • Pakistan • Peru • Philippines • Poland • Portugal • Puerto Rico • Qatar • Romania • Russia–CIS • Saudi Arabia • Singapore • Slovakia • Slovenia • South Africa, Republic • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • United Arab Emirates • United Kingdom • United States • Uruguay • Venezuela • Yugoslavia

Allen-Bradley Headquarters, 1201 South Second Street, Milwaukee, WI 53204 USA, Tel: (1) 414 382-2000 Fax: (1) 414 382-4444

Publication 1787-6.5.3 – May 1997
Supersedes Publication 1787-6.5.3 – September 1996

PN 955128-27
Copyright 1997 Allen-Bradley Company, Inc. Printed in USA